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AMIGA SHOPPER

Issue **71** January 1997 **£4.50** US \$9.95 • Hfl 19.95

Final Issue!

In this last ever issue we
reveal what we think will
happen to the Amiga now

Amazing programs for you
Full details on page 6

Inside this issue

- **It's the end of the world as we know it:** On this final issue occasion, we all spill our guts about how we feel for the future of our beloved Amiga.
- **Get Printing:** A whole new batch of printers for use with the Amiga come under scrutiny. Plus we look at the latest versions of enhancement software.
- **Power 68030:** What can you expect for under £100? A 68030 and 4Mb RAM, that's what!
- **DrawStudio:** The review version of the amazing new drawing package arrives in time for our full attention.
- **AWeb-II:** The commercial release of the popular HTML browser brings improvements, but is it enough?
- **I/O Extender & Multiface 3:** Two new Zorro based expansion ports for box Amigas.
- **Font Machine 2:** A full update to the amazing program that generates colour fonts in seconds.
- **CD-ROMs:** The latest CDs appraised.

PLUS:
DrawStudio
The full review
Font Machine 2
Exclusive review of the complete
program update
Power 68030
Cheap acceleration?

future
PUBLISHING
Your game-free guarantee

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Editorial



So, here we are at last. The final issue. Many people didn't think we'd ever manage to come this far, but it is a tribute to the talents and efforts of all those who work for Amiga Shopper that we have. It is only a shame that we won't be here to tell you about all

the new and exciting products that are still in the pipeline for the Amiga.

The death of AS by no means signals the end of the Amiga. So don't give up just yet. All your favourite people will still be around in Amiga Format, so you don't have to say goodbye just yet.

And as if to prove a point this month's AS is packed from cover to cover with news and reviews of the latest hot products. We thought about the situation and decided that rather than create a morose last issue looking back at former glories, we would continue to cover all the brand new releases with the editorial quality that made us so popular.

So this month, you'll find a round-up of all the new printers and enhancement software for the Amiga as well as new pieces of hardware like the I/O device for A4000 owners and the cut-price accelerator for A1200 owners. Then there's the commercial release of AWeb-II and the review of the excellent DrawStudio. You can find the demo of this product on this month's Coverdisk. A brand new version of Font Machine gets the full treatment and finally there's a roundup of the new CD-ROMs.

Of course we couldn't go out without letting you know exactly what was happening. So, we all got together to give you our feelings on the end of AS and the future of the Amiga. Well, this is it. The end of the line.

Take care

David Taylor,
Deputy Editor

Shopper**Disk**

Brilliant. There's no other word for it.

DrawStudio Demo 6

A powerful new program that seems to have come from out of nowhere. This drawing package is blurring all the lines and causing quite a stir in the office.

Pretium Demo 8

Try out the new accounts software.

Utilities 8

The last 6 utilities to grace an AS disk.

Full index over the page

The **essential** magazine for Amiga enthusiasts

AMIGA SHOPPER

Shopper**Features****The Final Issue** 12

As we look towards the future (and a Future) without Amiga Shopper, what do we all think of its demise and what hope is there for the Amiga? Everyone has their say.

Printers 14

One of the most popular additions to the computer is a printer. It makes all those word processing and paint packages worthwhile. The technology is moving forwards all the time and **Larry Hickmott** is our expert. Read his reviews of all the new machines and the latest releases of the software that drives them. Which gives the best results for Amigas. With Christmas in the air, you should read this before buying that present.

Shopper**Reviews****Power 030** 19

A 25Mhz 030 accelerator for under £100? With 4Mb RAM onboard and a 68882 maths co-processor. **David Taylor** sees whether this is an offer that's too good to be true.

DrawStudio 20

It's a storming program that can do more than any other program of its type. In fact, there aren't really any other programs of its type - it's that original. **David Taylor** gives you the details on the release version of this new package.

AWeb-II 22

Another WWW browser goes commercial. **Graeme Sandiford** discovers what this program has that makes it so special.

I/O Extender & Multiface 3 24

Two new interface extenders for the A4000 come under the scrutinous eye of **Simon Goodwin**. What can they do for you?

Font Machine 2 26

A major update brings powerful new features to the program that can create new typefaces in seconds. **David Taylor** has the details.

CD-ROMs 28

Ben Vost reviews three of the latest releases.



The DeskJet 690C is just one of the printers reviewed in our special printer feature.

Shopper**Tutorials****WWW Tutorial** 42

Ben Vost ends the two part tutorial for those building their own WWW pages.

CanDo Tutorial 44

John Kennedy winds up the extensive tutorial series that has helped you use CanDo.

Blitz BASIC 46

Paul Overaa finishes off his help and advice for BASIC programmers.

Shopper**Regulars****Coverdisk** 6**News** 10**Amiga Answers** 33

Having problems? We'll try to help.

Public Domain 37**Letters** 48

The sad farewells which flooded in.

The End 50Shopper**Services****Back issues** 30**Amiga Format** 31**Reader Ads** 32

Weird Science

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Aminet Set 3, dated July 1996, consists of 4 gigabytes of software in 9,000 archives. The software is on four compact discs and has included the full versions of Imagine 4.0, XiPaint 3.2, Octamed 5.0 and some commercial games. With 95 megs Utilities, 79 megs Documents, 408 megs Text Software, 12 megs Disk/HD Tools, 7 megs Hardware related, 756 megs Pictures & Animations, 208 megs Graphics software, 394 megs Graphics & Sound Demos, 563 megs Games, 685 megs Music modules, 28 megs Music software, 131 megs Communications and more. In fact the contents of Aminet CD's 9 to 12.

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The Amiga System Booster CD enables users to really make the most of their computers with a superb collection of tools to push the capabilities of the Amiga to the limits. Nearly all the fantastic utilities can be started by simply direct from the compact disc. No de-archiving required. The contents include a vast collection of screen blankers, mouse tools & commodities, backup, file management, cache programs to optimise system performance, data recovery, CD-ROM utilities, virus killers and a whole host more. This CD-ROM provides for beginners and professionals.



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AMINET SET 2

The Amiga Developers CD from Amiga Technologies comes complete with the all the developers tools and documents provided to the official developers. Included are the complete CD32 developers tools with Build CD and ISO CD, Envoy 2.0 package, Enforcer Workbench 2.0, 3.0, 3.1 tools and documents with the updated native developers kit, SANA II package and the installer packages. Also included is a vast amount of info. A must for Amiga enthusiasts.



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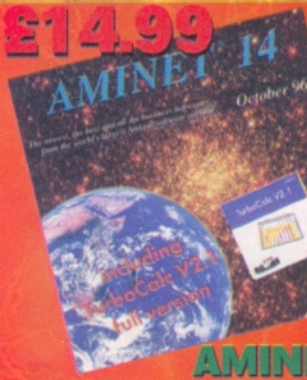
The Amiga Repair Kit CD comes complete with the all with all the tools required to backup and rescue your precious data on hard drives. Disk Salvage 4 will rescue and restore most damaged, corrupt and even deleted files from floppies, hard disks etc. During the process it will attempt to fix all problems caused by software failures or physical damage. EDB Salvage 1.1 is a superb program that will allow you to restore your valuable data even if the Rigid Disk Block has been destroyed or over written. Recovery can recover files from normal or corrupted disks. Essential Amiga Tools.



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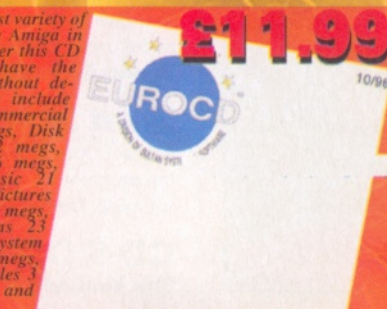
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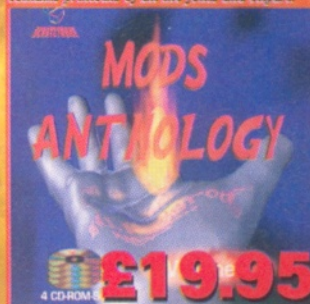
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EURO CD VOL 1



MAGIC PUBLISHER

Magic Publisher comprises of four compact discs and on this unique CD-ROM set you will find all you need to create professional looking documents. There are more than 10,000 Fonts (Colour Fonts, Bitmap, IFF, Adobe, Intellifonts, TrueType & DMF), more than 5,000 clipart. Many of these are exclusive to this compact disc. Full commercial versions of Final Writer 4 SE and Wordworth 4 TD are included. Both rated as great word processors on the Amiga. Tools for creating WWW pages along with backgrounds and special clip art for this purpose is also included. A 100 page booklet containing printouts of all the fonts and clipart.



MODS ANTHOLOGY

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THE LEARNING CURVE

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SoundStudio has arrived. With fabulous new features including full mixing facilities, save modules as samples, notation editor (with printing), 64 channels, new midi commands, more, more, more, no sample size limits, fastforward facility and more. SoundStudio has lifted Amiga music creation to new heights. A must for all musicians!

SOUNDSTUDIO

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NETWORK CD 2

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Featuring a massive 256 x 256 pixel pictures and detailed texture file can be installed to create images with absolute seamless edge to edge matching. Superb for wrapping around any complex object perfectly or adding various backdrops for WWW pages etc. Ending the right texture is easy with a 24 page colour index booklet displaying all of the textures in their glorious colour. The images are in IFF, GIF, JPEG, GIF & PCX formats.

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Coverdisk

As this is sadly the final Coverdisk of Amiga Shopper, we decided that we'd include a demo of what might prove to be the last great Amiga product, DrawStudio. **David Taylor** introduces the final cut.

We haven't gone down without a fight, but now that the final bell has sounded, we didn't want to go out with a disk that wouldn't be of real use. This disk has two commercial demos and six Shareware utilities so you can't go wrong. DrawStudio, reviewed this issue, is such a strong package we decided everyone should get to try it out. It seems nothing can stop people producing software that improves on earlier products and stretches the limits of the machine. If you do like the product, then we urge you to buy it, because without support from users, there will definitely be no more commercial releases from developers of products of this calibre.

ApplicationZone

DrawStudio

This program takes structured drawing to new levels, literally, on the Amiga. We previewed a version last issue and here we have the demo. Essentially structured drawing aims to make the creation of pictures and diagrams as easy as possible for everyone. If you're a great freehand artist then you don't need a computer that can help you out, but for the rest of us a program that can make everything as error free as possible is indispensable.



The power of DrawStudio could make it one of the Amiga's most popular programs ever - if you support it.

DrawStudio offers drawing tools that make sense. As well as the usual line, square and circle type brushes, there are also bevelled boxes and bezier curves. You can select colours for lines and for the fill colour of objects as well as the solidity and thickness of lines. The end of each line can also be defined to either a blank or

a set of arrows or curves. When you draw a line or rectangle or circle, it is placed on the page as an object. Each object is totally separate to any others placed on the page and you can go back to any later and pick them up and move them or resize them. When you have a set of objects positioned correctly together they can be

Guide to the DrawStudio interface

1 ARROW TOOL

Allows you to select objects for editing, moving and resizing. Selected objects will be shown by the little boxes at the edges.

2 ROTATE TOOL

Allows you to pick up an object and rotate it freehand to the desired angle.

3 HAND TOOL

You can move around the page with this. If you are zoomed in close, this allows you to move the visible area of the page around to find what you need.

4 ZOOM TOOL

This opens up a magnifying glass. You can simply click on an area to go in a level or drag a box over the area you are interested in to see just that part. If you hold down the shift key, you can zoom out.

5 FREEHAND TOOL

Draw lines freehand

6 TEXT TOOL

Place the text on the screen. You can type in as normal. The font type and size are defined in Text menu.

7 STRAIGHT LINE

draw a straight line

8 BEZIER CURVE

Draw lines which you can then bend to the correct angle. One to experiment with.

9 RECTANGLE

Filled any way - chosen through the Attributes menu.

10 ROUNDED CORNER BOX

The same as the rectangle tool but with squared off corners.

11 CIRCLE

It's a circle, obviously.

12 INCOMPLETE CIRCLE TOOL

Draw a circle as normal then hold down the left mouse button and move it around til you have the amount of the circle you want. This too can be filled or line.

13 LINE COLOUR

Chooses the colour for the lines from a palette requester.

14 FILL COLOUR

Chooses the colour of the fill from a palette requester.

15 LINE DASH

Selects the type of line, from solid to intermittent dashes.

16 THICKNESS OF LINES

Chosen from a drop down menu.

17 END OF LINE TYPE

Allows you to choose style of the end of lines, from arrows and boxes.

18 THE PAGE NUMBER

From the project you are working on. Projects can be multi-page documents like the tutorial included.

19 LAYER LEVEL

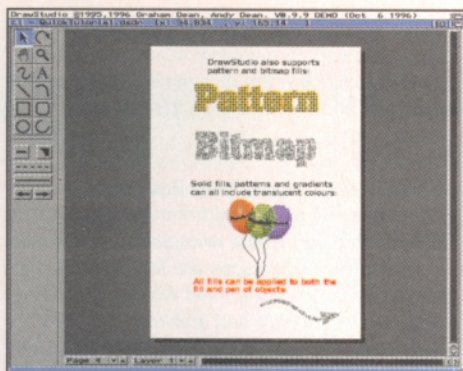
Allows you to select the layer of the page. You can add new layers by clicking on the text and bringing up the layer requester.

20 Objects can be selected and grouped to create larger objects which can then be moved as a single object.

21 THE LINE TOOL WITH AN ARROW END

Notice how as the selected object it is marked with boxes.

22 Complex and impressive objects can be built up with care even by mediocre users. This display is 1-bit, but you can up the display mode on faster Amigas to colour.



The tutorial project is a multi-page document which shows off some of the most useful features of the program.

grouped to act as a single object (you can ungroup them back to separate objects again if you want). This way you can create components of a picture from the lines and boxes that make up any image – like the wheel in the picture created from ovals and lines. Components can then be cut and copied and pasted as an ordinary object, resized and changed as

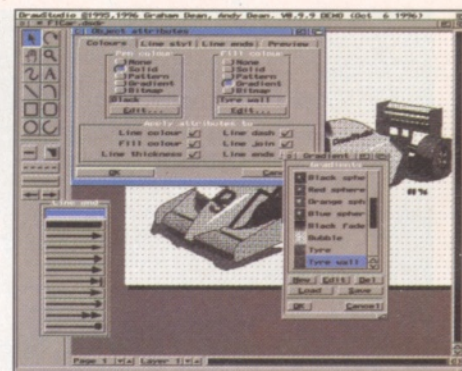
necessary. Already you can see how this can make the creation of pictures easier for everyone.

Secondly, DrawStudio offers layers. Layers are like an extension of objects. They allow you to build up a picture by placing different sets of objects on different layers like onion skins. This is useful for imported objects and ones placed partially over the top of one another. You can then easily create multi-layered pictures – it's like a stationary parallax effect.

You can import bitmap pictures into objects so that you aren't stuck with single colours inside boxes. You could also have textures or scans inside and colours can be given a degree of transparency so they show objects and colours behind them.

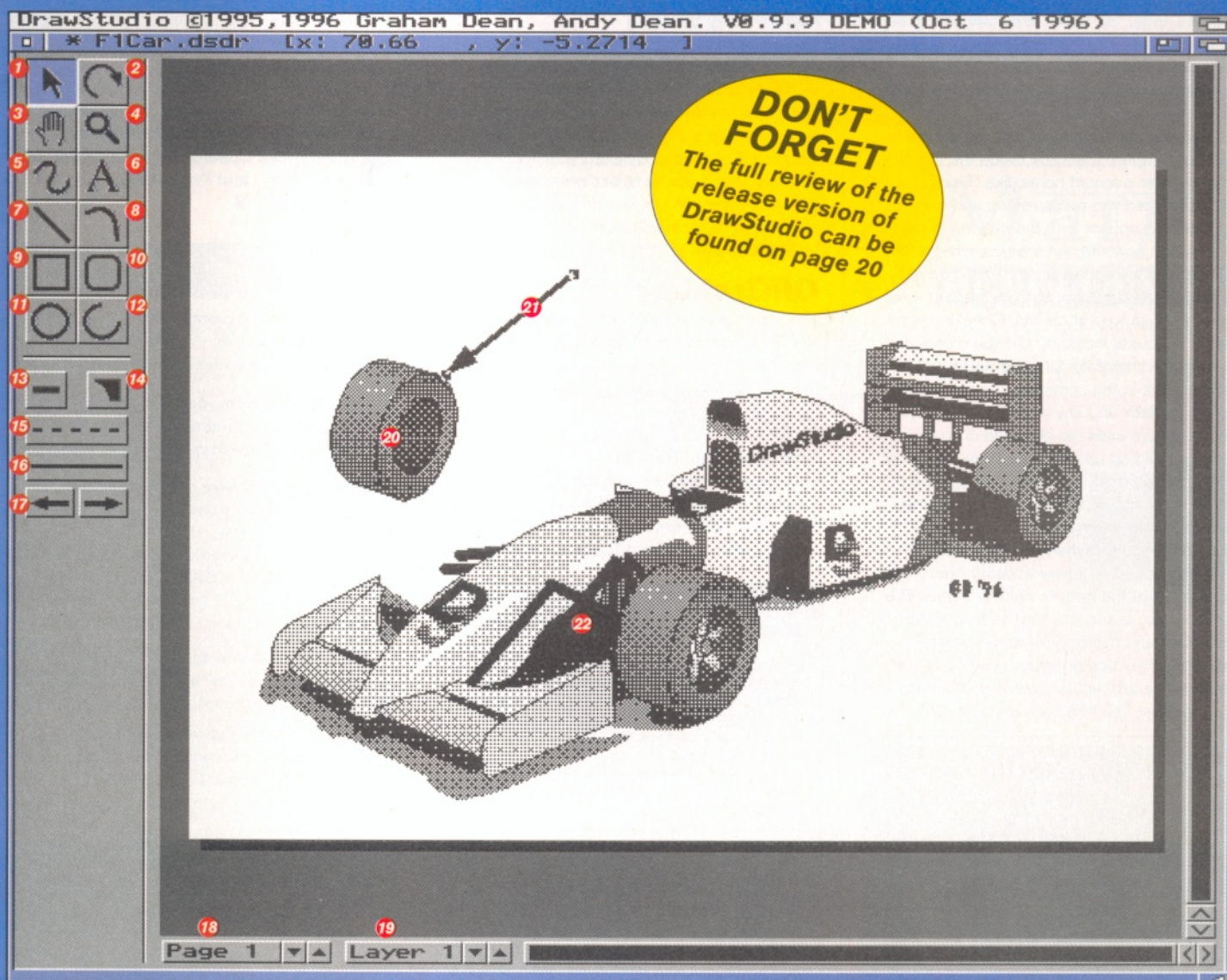
Aside from the toolbar, there are many features accessible from the menus. Requesters are often nestled within one another and you have to work through levels to define the areas you are interested in. Look in the Attributes requester for objects which allow you to alter all the parameters of objects and lines, including the setting of the bitmap fill mentioned earlier.

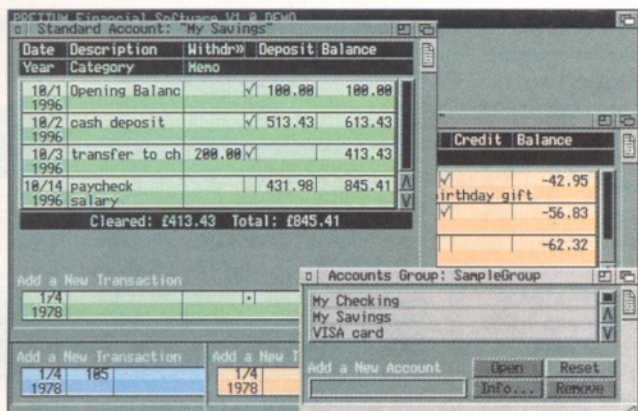
The program will only install to a hard drive, but requires no further installation after de-



The object attributes allow you to make all manner of changes to any object. This is where you choose bitmap fills.

archiving. You should also note that it uses MUI so you must already have that on your system. If you don't, you can obtain evaluation versions from Aminet, BBSs, PD houses and numerous Coverdisks. The full version costs £59.95 for floppy and £79.95 for CD and is available from LH Publishing on 01908 370230. For more of a tutorial check out the project included.





Pretium gives you three types of accounts held in the Accounts group.

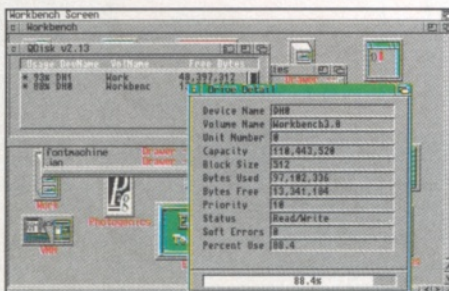
Pretium

This is the second commercial demo this month. Reviewed last issue it scored a respectable 69% and now you can try out the program's features for yourself. It's not the full version but you can still use it to set up and save your own accounts.

To get started, load the program up and then select New Group from the Project menu. This allows you to set up your own set of accounts. Enter the name of the account group into the requester and select the path. You can also enter a password to protect the entire accounts group from being opened. The empty accounts group window will open.

You now enter the names of the accounts you want to open. Just click inside the text box and type in an account name, like "Dave's Savings". When you press return, another requester will appear with the options to add a memo to the account, set the password and opening balance and to choose the type of account. There are three types: standard – for normal savings type accounts, Checking – for cheque accounts including cheque numbers, and Credit – designed for credit card use. The first two work in the same way, displaying the positive in black and any negative in red. The Credit account uses the opposite colours, as it works by building up debt, the more transaction you put on the card, the higher the figure and to get the account into the red (credit), you pay off the card. It may seem a little unusual but is meticulously logical when you think about it.

When you have a new account open, add transactions at the bottom of the window. The date is shown at the left. Next to that is the description and category window – every transaction has a category and you can't start entering data until you set some up. Choose the categories list from the View menu and then set



QDisk – a WB utility that monitors volumes and gives details.

up ones that you will use by typing in their names into the text field and pressing <Return>. As every transaction is on two lines, you enter the description on the top line and a category on the bottom. Next to the categories box is the actual amount, the left for credits and the right for debits (reversed in the Credit account). The second line of this section is left for a memo if you want to add some text. The balance is shown in the next window and is generated automatically.

The program is easy to get to grips with and if you do need help then there is a full AmigaGuide document. The full product is available for around £40 from IDD in the USA on Tel: 001 352 373 9471.

Utilities

BlizKick

Author: Harry Sintonen

This program is a must for Blizzard board owners allowing you to rekick any kickstart ROM file in RAM using your board. It means you can get faster performance out of your machine and even map a different ROM from another machine. So you can kickstart your A1200 with A500 ROMs if you want backward compatibility. Obviously you can just use it to speed up your machine or to replace several other commands you already use.

GifGrabber

This script is associated with this month's WWW tutorial on page 42 and is explained in detail there. It's an ARexx script written by Michael Battilana of Cloanto.

QDisk

Author: Norman Baccari

This program monitors disk usage of mounted volumes on Workbench and allows you to set limits to capacity beyond which will invoke a warning. When you start the program it will

Dodgy disk?

To avoid errors when installing to floppies, ensure that your destination disks are of high quality. If an error occurs, try re-booting and using a different spare disk – the majority of errors are caused by faulty destination disks.

If your Coverdisk refuses to work and you are certain it is faulty, please return it, along with an S.A.E., to the address below. Please do not send faulty disks to the Amiga Shopper offices.

Amiga Shopper Coverdisk
(insert the name of the disk),
TIB plc, TIB House,
11 Edward Street,
Bradford
BD4 7BH.

open a window with details of the drives and by double clicking on a volume name, you will get more details about the drive including capacity, block size and soft errors on the disk.

Whirl GIF

Author: Kevin Kadow/Lars Eilbrecht

This port of the command from Unix is a program that can create animated GIF files from a set of GIFs. GIF images are not native to the Amiga, but they are the most widely used file format on the WWW and animated GIFs are often used on logos or pictures so you can use them to liven up your own WWW home pages.

WinCommodity

Author: Michael Gollmick

This program adds a few hotkey features to Workbench. It allows you to centre windows, close windows, go to parents, flick through windows and more. The hotkeys are detailed in the documents and can be set up using the tooltypes.

WW5 HTML

Author: Rudy Kohut

This is a wizard for Wordworth 5 helping you create Web pages by completing HTML tags for you. It gives you shortcuts to many of the standard HTML source.

Well that's it. It just remains to say farewell and to thank all the past contributors. Hopefully these Coverdisks have proved of use to everyone and I've certainly enjoyed compiling them! ■

Beginners, look!

Before using this month's Coverdisk, please be sure to back it up – just in case. Simply follow the easy instructions below.

- 1** Boot up from your Workbench disk or partition, double-click on your Shell icon – to be found in your System Drawer.
- 2** If you only have one disk drive, type in the following line and then press Return.
Diskcopy from DF0: to DF0:
If you have two drives, place the Coverdisk in DF0: and a blank in DF1:, then type in this line instead:
Diskcopy from DF0: to DF1:
- 3** Follow the on-screen prompts and remember that the Coverdisk is the source disk and the blank is the destination.
- 4** If you used the two-drive method, remember to rename the copy by clicking on its icon and pressing right-Amiga r.
- 5** If you have two drives, you can also copy the disk from Workbench by dragging the Coverdisk icon over the destination disk's.
- 6** Then place either of the Coverdisks in DF0: and reset the Amiga to boot it. It is best to boot disk 1 (or the Subs disk if you're a subscriber). This will let you install all the disks to either floppy or hard drive.

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enquiries welcome

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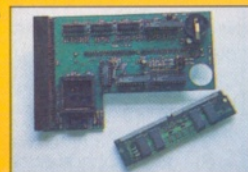
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News

*Cologne show report,
Phase 5 news and more
on Village Tronics' new
Picasso IV card in Amiga
Shopper's final news
round-up*

Woah de Cologne!

November 15-17 1996: Cologne, Germany. The Amiga's biggest and best show was back. It is getting smaller every year, but it is just as vital as ever.

Computer 96 was ostensibly for the Amiga, Mac, PC and Acorn however, I would say that at least 80 per cent of the attendees were there to see what was new for their Amigas. German telly was there, as usual, covering the various things going on at the show and the noise levels were very high.

But you want to hear about what was new. I saw a new video conferencing system called Cocktel from ProDAD. Able to send and receive video and audio signals over the internet or a direct telephone connection it costs less than £300. Phase 5 were there with an enormous stand demonstrating their alpha version of the PowerUp board complete with special versions of various software titles like Reflections and a demo mandelbrot program rendering the complex fractal image practically in real time (at 700 iterations) at roughly 700 x 500 in 24-bit.

Stefan Ossowski had a large stand that was consistently four deep in manic Amiga punters all wanting to say hello to Jason Compton, John Potter (the author of Directory Opus), and various luminaries that came and went on the stand.

Amiga peripheral prices were also something to wonder at. VoB had a Nokia 17" monitor with a TV tuner and built-in speakers. It was also suitable for graphics card use since it could handle rates of 64kHz – all for about the same

*With more
than 45,000
visitors to
COMputer
96 in
Cologne,
you were
guaranteed
a long wait
at the bar*



cost as the standard Microvitec 17 inch. They also had a CD burning solution with a Mitsumi drive and their own software for just 999DM (roughly £400!).

Computer Vesalia, a big mail order house, had the Artec Colorstation A6000 24-bit, single pass, SCSI 2, 2400dpi A4 scanner complete with software for just 699DM (about £280). Accelerator cards, hard drives, CD-ROM drives and memory were all at the cheapest prices I have ever seen.

If you hadn't already got a CD-ROM drive for your A1200 you could get one of the Amiga Technologies Q-Drives for about fifty quid and the 32Mb Simm I bought for my new accelerator card cost me just £120.

The presence of other platforms didn't seem to dampen Amiga users' spirits – they were even lifted when they found Dr. Peter Kittel demonstrating a BeBox on the Village Tronic stand and a Silicon Graphics O² machine on the Lechner Verlag stand.

Overall, the show, though smaller, was still absolutely packed and the exhibitors I spoke to were all very pleased with their sales. Amiga Oberland, one of Germany's biggest Amiga software distributors completely sold out of their stock of 150 Cyberstorm II cards – and that was on the Friday.

AF 2 CD bonanza!

So, you've followed Amiga Shopper since issue one – a total of more than five years worth of important Amiga information. But all good things come to an end and Amiga Shopper is no exception.

Still, you can look on the bright side, the bright side that is Amiga Format in fact. To kick off your new Amiga year, why not take a gander at the January issue of Amiga Format breaking new ground as always by being the first Amiga magazine to offer two CDs on the cover at no extra cost!

Amiga Format has some of the best journalists in the Amiga industry today with Nick Veitch and Ben Vost at the helm. If you are familiar with writers like Dave Taylor, Paul Overaa, John Kennedy and Graeme Sandiford from these pages, you'll be pleased to find them in Amiga Format every month from now on.

AMIGA FORMAT



Petro Tyschtchenko, boss of Amiga Technologies, in a pensive mood.

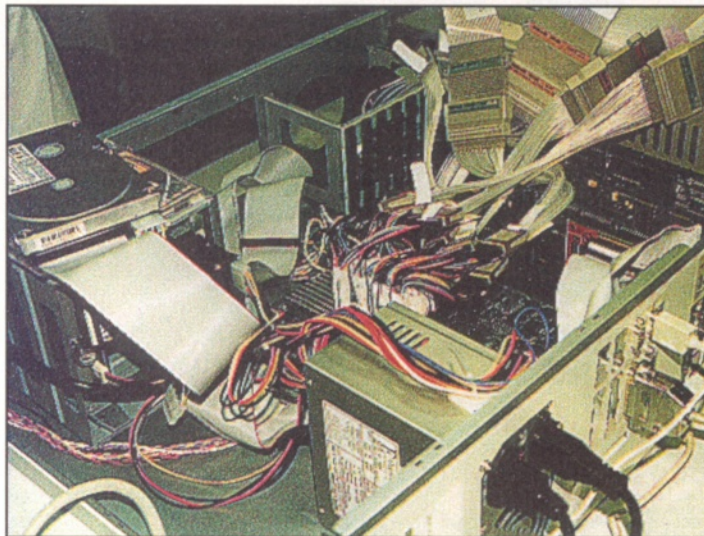
Phase 5 power up

As previously stated, Phase 5's Power up program to bring the PowerPC to Amiga users, is going great guns. Along with the PowerPC-upgraded version of Reflections shown at the Computer 96 show in Cologne and the other companies producing software which will use the new 240MHz processor to great effect, Phase 5 are also busy converting certain portions of the Amiga's aging OS to the new chip.

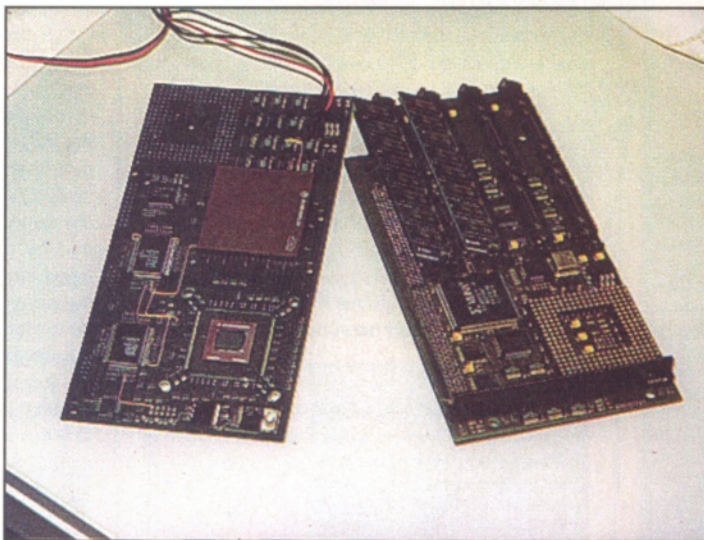
At the moment, the dual processor development card is in Alpha stage (don't worry about all those leads coming off the board, they go into a machine that checks the integrity of the board electronically) with only a few developers actually having a board to work on, but Phase 5 promise that December 96 will see the official beta boards get set out to any company interested in developing for a processor that is more than twenty times more powerful than a 68060.

Wolf Dietrich, head of Phase 5, promises to have a consumer version of the board ready for next spring for the A1200 and A4000 and says that a multi-processor version should be easy to implement, which should come as a welcome surprise for Amiga owners who want the fastest possible rendering times. For more details on the PowerUp project contact Phase 5 on 0049 6171 583787 or mail them at: mail@phase5.de

The component parts of the PPC accelerator (sans fan). The PowerPC part sits on top of a standard CyberStorm card.



Phase 5's PowerPC accelerator for the Amiga 4000 in full test mode. The leads coming off the almost invisible board lead to a special chip testing machine.



Blittersoft release Picasso IV

Amiga graphics cards are rapidly becoming as popular as accelerators and Village Tronic have just upped three stakes with their new Picasso IV. The Picasso IV which should be available when you read this will be a ZorroII/III card suitable for any Amiga with Zorro slots (including A1200 towers). A definite bonus for AGA machine owners will be the built-in flicker fixer so that you won't need to worry about having to use a monitor that can sync down to 15kHz any longer. Because the card can hold 4MB of EDO ram 24-bit resolutions are available up to 1280 x 1024 and 256 colour screens at 1600 x 1200 are also possible.

The Picasso IV also has an internal PCI bus architecture which will allow for additional modules to be plugged into it. The first module (which is currently already in test stage) will be a TV tuner board which will give you a video signal in a scalable window on a Picasso Workbench. You will be able to grab an image from this window. Also on the cards, so to speak will be a new version of Pablo, Village Tronic's flawed Video encoder, an MPEG decoder for video CDs, Soundmodule containing a DSP and MIDI ports and

finally a 3D accelerator module complete with dedicated RISC processor designed to give you realtime textured and Gouraud shaded polygons. Although no pricing has been set for the expansion modules Village Tronic and Blittersoft have set a UK price of just £299.95 for the PicassoIV.

Village Tronic have also, in a shock move, just released a new and updated set of drivers, not just for their Picasso card, but also for some of the other cards like Piccolo and Merlin.

This new software will support 16, 24 and 32-bit Workbench screen modes much like Cybergraphx and has been especially improved for Shapeshifter to offer increased speed in Mac emulation and less screen corruption when you are switched back to your Amiga. Even more interestingly, it not only offers multiple screen and multiple card support for use with more than one monitor but is completely compatible with the Cybergraphx standard.

There has been no price for this software upgrade yet, but if you contact Blittersoft on 01908 261466 I'm sure they will be able to tell you.

Imagine on the Amiga? You choose

Impulse, longstanding Amiga developers and creators of Imagine are in a quandary. They don't know if it still worth their while to continue development on the Amiga version of their popular ray tracing package. Let them know by contacting their independant surveyor Mike Nixon on 001 612 425 0557, mail him at mikenixon@gnn.com or visit the Imagine website at <http://www.coolfun.com>.

AWeb hits its pace

The new updated version of AWeb certainly seems to be a major improvement. New features include tables, pop-up menus, greyscale palette support, more MIME types and all-round better performance. The new version is available free of charge to registered users on the AWeb home page at <http://www.networkx.com/amitrix/get-update.html>.

Petro hangs on – Sassenrath quits in disgust

This month has seen an inordinate amount of flaming on Usenet regarding the prospective buyers of the Amiga ViScorp. Petro Tyschtchenko, general manager of AT, offered a conciliatory statement and support which was swiftly followed by a public statement from Carl Sassenrath, inventor of CDXL, saying that he was disgusted with ViScorp for various reasons including the fact that he had been owed money for more than three months. He also accuses the ViScorp management of incompetence, particularly with regard to their attitude towards both Carl himself and also RJ Mical whom they had originally asked Sassenrath to recruit. Both statements can be found at the Amiga Web Directory if you wish to examine them in detail.

The Amiga Web Directory is at <http://www.cucug.org/amiga/> although more local mirrors are also available.

It's **the end of the world** as we know it...

The whole AS team gathers together to revel in past glories and ponder future failings.

We aren't going to dwell on this, but it is the final issue. So, we all got together to say what we thought the chances were of the Amiga bouncing back. What brought us all to the Amiga in the first place and what made it so special? For the last time, we reveal what we all think about this great machine's fortunes.

David Taylor

Deputy Editor

When I first saw the Amiga, I had not been involved with computers since the Spectrum days because they seemed to have stagnated. I'd seen the IBM PC and it didn't seem to be able to offer anything. Home computers were not really advancing and then all of a sudden here was a machine that blew my socks off. Being a lowly student, I did what any decent

scrounger would do – I got my parents to buy me one. Ostensibly it was going to be used to write a book my father had been commissioned to do and that was indeed what it spent the first summer doing. When I could stop him from playing Monkey Island, that was. I think everyone was impressed with what a single floppy machine could do. We'd never seen graphics like this before.

As time went on, I used the machine for all my study and got seriously into the games. Then, I discovered that there was a whole other side to the machine and one that was remarkably easy to master. A hard drive and new A1200 followed and then an accelerator card. Suddenly everything was quick, clean and fast. It was an eye opener. The machine which I had thought was tops, had been beaten by its own successor.

After a chance encounter, I began to work for the oldest Amiga magazine around and soon started to compile their Coverdisks. I loved the challenge of cramming in as much as possible from the wealth of software that was around. I moved to AS and then took over when Sue left and have tried to keep the magazine on course for the last seven months.

The really sickening part about the Amiga has been watching it stand still for the past

"In a dream world, the Amiga will be bought up, **revamped** and bounce back... but this is the real world."

few years while the PC made real inroads into the loyal users. It's not possible to still say that the PC is useless. It isn't. Windows 95 is not a perfect system and is incredibly sluggish, but it does have powerful architecture that it can run on. 3D rendering on a Pentium is a lot faster. OK, it does cost £1000 for a system, but so does a decent Amiga setup. Let's face facts, the standard A1200 is an under-powered machine in today's world. I had been loathe to move to the PC, but six months ago, I realised that for professional reasons I would have to. I stumped up £1500 and promptly watched the price of the same system fall by a third over the next few months. I've now been working full time on PC mags for about 6 months and working for AS in the evenings. It has been gruelling, but I think it does show how hesitant I have been to leave the Amiga.

It is still a wonderful machine and if it can do what you want it to then you have to be mad to leave it just to keep up with the Jones'. I know a lot of Amiga users have done, some because they need the PC compatibility (let's be honest, MS compatibility), but others because they think that the grass is greener. You have to hand it to Microsoft; they do a great ad campaign as can Intel. If only the Amiga had the same backing we might be looking at a very different future.

In a dream world, the Amiga will be bought up, revamped and bounce back. I'll come back to AS which will have been relaunched as the world's biggest selling computer magazine. But this is the real world and VISCorp, if they ever manage to buy the Amiga, have a mountain ahead of them. They have always claimed to be behind a new desktop machine. The trouble is the custom chips that made it ground breaking have now become a hindrance. A whole new system needs designing along with a complete, Internet orientated, OS and Workbench. To design a system from the ground up will take years. They may have been working behind the scenes on it already, but how far have they got? A new machine that sells (because a new machine with the sort of R&D required as mentioned will have to have a high price tag) is looking slim.





It looks very much like the floor underneath my desk!

What about their EDs? Well, if they have Amiga compatibility fine, but they will still be using out of date technology. The Amiga's WWW capabilities don't stretch to the huge array of Plug-ins and extras used by Internet Explorer 3 (Microsoft) and Navigator (Netscape). You can browse the WWW using it, but you can't get the full experience. You're not missing much at the moment but that may well change as the Internet technology gets more and more established. Add to this the fact that Acorn have been rolling their Network Computer (the flash name for a plug and play hardware Internet solution) for months and will start selling in March for under £300 and you can see that the ED has a battle before it is even produced.

None of this changes the fact that the Amiga, especially the A1200 and A4000, are excellent machines. If you're interested in WP, DTP, graphics, and games (and to an extent 3D if you've got the processor for it) then why change from something that has always done what you want. It will still be able to run the same programs with the same ability ten years from now. Stick with it and save yourself a lot of money and aggravation.

Full time, I'm working as the CD-ROM editor for PC Plus - Future's biggest selling computer title. Claimed by the PC after all these years. Although AS has now gone, I won't be leaving the Amiga completely. I'll continue to compile the Coverdisks for Amiga Format and write any reviews they need doing. ■



John Kennedy

So, this is my last ever article for Amiga Shopper. I find this sad not only because it means the end of a unique magazine, but also because of what this says about the state of Amiga itself. I was at the Toulouse meeting, and thought that there indeed might be a future for the Amiga, first as a set-top box and later as a development tool. However, negotiations have once again moved with the speed of a dead whale, and it's now very probable that there isn't going to be any kind of positive future. It's too late. The PC caught up and passed the stagnating Amiga in terms of graphics, sound and even the operating system. The future of digital TV means that the Amiga won't be powerful enough to cut it as a set-top box, and the "Amiga compatible" computers are destined to be expensive follies.

It was great while it lasted, but we're on the last lap now. I'll continue to write for Amiga magazines for as long as I can, but it's inevitable that I'll be concentrating more on the Internet and PC side of things as time progresses. It's time to move on.



Paul Overaa

To some extent I suppose it was inevitable that Amiga Shopper, being a specialist mag, would be affected. I'm particularly sad about the loss since it's been one of the few mags that went out of its way to cater for serious users. What really annoys me about the current Amiga situation however is that none of the difficulties have much to do with the technical issues surrounding the Amiga as a platform itself. Software-wise the Amiga (even now) is only just beginning to show what it's really capable and on top of that of course, it is still the most cost effective platform around.

Like many people I've hedged my bets by continuing to take an interest in the PC but I'm certainly not giving up on the Amiga and, needless to say, my tutorials in Amiga Format will continue. Total Amiga C is also now scheduled to appear in the next few months.

One worry of course is that there will doubtless be a number of long suffering Amiga users who see this as yet another sign of the end of the Amiga. It isn't and in fact I think perhaps the best thing any Amiga user can do at the moment is to get themselves on the net. There is still massive support for the Amiga amongst serious users around the world and, without doubt, a web/Internet connection gives you a direct link to that community.



Larry Hickmott

Goodbye Shopper. So the end has begun. Amiga Shopper has turned full circle since that great beginning many years ago when its sister publication Amiga Format first released a preview of the ultimate magazine for serious Amiga users.

Since that great day, Amiga Shopper has been the epitome of what I feel a good Amiga magazine should be about. No games, plenty of editorial on what matters to the serious Amiga user and above all, it was a bloody good read.

Although many may disagree with its direction in the last few years, it was still an essential buy for the dedicated serious Amiga user because 'Shopper' was different to the rest of the magazine crop. Yet, I know better than most how difficult it is to keep a serious Amiga magazine like Shopper afloat while the market around you disappears and the "know alls" start whining about things they know 'nout about.

The end of Amiga Shopper tells us many things about the Amiga and where it goes from here. The most poignant message is that support for the Amiga will continue to diminish while the Amiga community shrinks and quite a few of those left continue to leave their hands firmly fixed in their pockets while retailers, magazines and others supporting the platform continue to disappear from our midst.

It doesn't help when those handling the machine are making one balls up after another but at the end of the day, the Amiga doesn't stand still just because Escom, Viscorp or who ever owns it can't get their act together. There are plenty of others out there wanting to support it, to make it better, if only everyone who owns an Amiga, would support them.

It may be too late to save Shopper, but those of us left can keep the Amiga dream alive if we continue to actively support those supporting us and therefore avoid any more obituaries. I would like to thank everyone associated with Shopper, it was more than a magazine. It has been a friend and it's always sad when you lose a friend.

Printer

Super Test

Find out which printer really is best for the Amiga. **Larry Hickmott** is the man who knows.

One of the first peripherals Amiga owners tend to buy for their machine is a printer. Many find it difficult to know which one to choose because of the wide array of choices and a lack of available information on which ones work with Amigas.

Like anything, buying the right printer is reliant on you having an in-depth knowledge of computer printers and that can only come two

Top 10 Points...

...for Buying a Printer

- 1. Do I need colour or black and white?
- 2. If I only need black and white, can I afford a laser?
- 3. Is the printer I want supported by either TurboPrint or Studio II or in the case of Epson Stylus's, EnPrint (Eyeteck).
- 4. Does the printer have a compatible parallel port. Avoid printers with names like DeskWriter because they are produced for Macintoshes and may only have an AppleTalk port which is no good if you have an Amiga.
- 5. If in doubt, don't buy it. What is the point in buying a printer that "looks" the business but may not work with the Amiga. Make sure it is supported.
- 6. Look into the consumables side of things. Compare the price of ink cartridges and availability of the special paper for that model.
- 7. Don't just go on price. Make sure the printer suits the type of work you do. If all you do is one offs, then an ink-jet maybe fine, but if you produce work where you need lots of copies, then maybe a laser would be better.
- 8. If buying a laser, get a PostScript one if you can afford it. They no longer cost the earth although are far from being "cheap". Adobe PostScript is also going to be more reliable than those listed as being "Postscript Compatible".
- 9. Four Colour ink-jets produce better graphics than 3 colour ones printers.
- 10. Try and see it in action on an Amiga before laying out the dough. With ink-jets, see how well it handles plain paper, while if testing a laser, see how well it copes with duplexing pages.

ways; through experience or from information sources like magazines such as Amiga Shopper.

Unlike a hard drive or a number of other add-ons, adding a printer to an Amiga requires a number of things before the printer can be used. Like a centronics parallel cable to join Amiga and printer. These are the same as those used for adding a printer to a PC. The same can't be said for the cables that join printers to a Macintosh, so don't buy a printer which is supposed to be attached to a Macintosh (unless you have some Macintosh hardware in your Amiga that has on it an Apple Talk port).

Next you need a printer driver. This helps the printer understand what the Amiga is saying to it, by converting the commands coming from the Amiga into a language the printer can understand.

It can't be just any old printer driver though because standard Workbench printer drivers in conjunction with the normal Workbench Printer preferences programs, produce awful looking output compared to that produced by printing enhancement packages. These are packages which come with printer drivers for many modern printers as well as enhanced printing preferences functions and utilities for printing pictures better than you can from other applications like your trusty word processor.

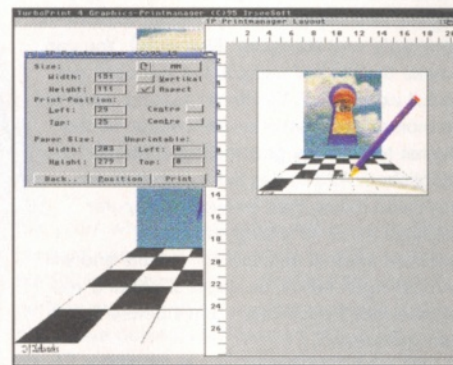
Avoid the trap of choosing a printer first and then trying to find a driver to suit it. Not a wise way of doing things. A better method is to make a list of the printers you feel are suitable for the work you want to do and then check that an Amiga printer driver is available.

You can make life a lot easier for yourself if you follow some simple guidelines. Choose a printer from the big three; Hewlett-Packard, Epson or Canon. There are plenty of other printers from other manufacturers and some may even be cheaper (and better), but it won't be worth a penny if there isn't a dedicated printer driver to use it with an Amiga.

There are exceptions to the big three rule such as pin printers (like those from Citizen, Panasonic and so on) and specialist printers like the PRINTiva from Citizen (reviewed here). If you want to be sure of compatibility, now and in the future though, then stay with HP, Epson or Canon - they are the companies generally supported by those making Amiga drivers.

What type of printer?

Before you make the decision on what printer you need, you will probably need to decide on what "type" you want. Should it be a pin printer



Printing pictures is best when using either Turbo Print's Print Manager or the "Studio Picture Printing Application" that comes with the Studio II Professional package.

or an ink-jet? Maybe a laser would be better? Only you can answer the question because the answer depends on what type of work you do.

For general use, I would say the ink-jet is best, but if you do a lot of work where an impact printer is required (multi-part invoicing, tractor fed labels and so on), then it has to be an impact printer. However, maybe you require a printer that is capable of producing lots of copies and if you don't need colour, then a laser is probably a better bet.

Within each of these categories (pin printers, ink-jets and lasers), are other groups. If you're choosing an ink-jet, then you need to decide between a black and white or colour printer, or models that can be both at the same time. Printers like the DeskJet 400 and the Stylus 200, can have colour or black print heads, but not both together.

Buying a laser is no less easier. You need to choose whether to have PostScript or not and on an Amiga, PostScript is very useful for reducing print times and proofing documents. For me, PostScript is essential. Over the years, I have collected many printers and it's been my experience that when it comes to lasers, those produced by Hewlett-Packard are generally the best, while for ink-jets, either Epson or Canon will do nicely. This explains why I have a number of HP lasers and a colour Epson ink-jet.

What is most notable these days is how far we have come in terms of quality. The progress is so remarkable that today I can produce colour covers for CDs using an every day colour ink-jet and you can hardly see the difference between it and covers printed on a press. Lets take a more detailed look at some options.

Citizen PRINTiva 600C

It isn't often that a printer comes along that is so different it turns out to be a whole new learning experience. But when the Citizen PRINTiva came for a visit, it was a whole new ball game. Let me start by saying that this printer should not be compared to ink-jets and lasers. At least not in terms of quality and so on. The PRINTiva is a different category of printer and as such, when deciding whether to buy a laser or an ink-jet, perhaps you should also look at the dry ink technology used by the PRINTiva.

For example, let's say you want to print using metallic colours. The PRINTiva can do this although I didn't get given any to try, so I'll have to take Citizen's word for it that it works. Maybe you want to print colour on glossy card. The PRINTiva will, an ink-jet won't and nor will your budget laser. There are many more examples of the things the PRINTiva will do that an ink-jet and lasers won't. Printing on art paper for example.



Using printers like the PRINTiva on an Amiga is child's play thanks to TurboPrint.

"the **Citizen PRINTiva** is an interesting printer that can produce excellent results on the right media and for specialist work is in a class of its own."

Ink Ribbons

The PRINTiva comes with four ink "ribbons". The instructions on fitting them were hardly very good but I'm told by Citizen that they can be fitted in any order. Because each colour is a separate ribbon, you only replace what is required if they run out. The ribbons cost around £3.99 each while metallic ones are £9.99.

To test the PRINTiva, I used TurboPrint 4.1. Things got off to a bad start – the first print tests had to be aborted because I ran out of memory in my 6Mb Amiga 4000. Unlike the ink-jets I was testing, TurboPrint seemed to be storing the page in memory and then printing it in one go. Which because of the way the PRINTiva prints the page, was understandable.

When printing a colour image, I found the PRINTiva printed the Cyan colour first, then Magenta, then Yellow and finally Black. What is



interesting about this though, is that the paper feeds right through the printer as one colour is printed and is then pulled back into the printer for the next colour to be done.

The quality of the images produced by the PRINTiva were quite good although it's a very different looking finish to the ones produced by ink-jets. What was noticeable in the solid colours was some breaking up on textured plain paper. Use it with the ever smooth Mellotex, and the resulting image was much better.

After much testing, I was left thinking that this is probably not a printer to be used for every day type of printing. A ribbon I'm told will do 60 A4 pages with 5% coverage. In real terms, the figure is probably a lot less (perhaps half). So, if the majority of your work is T-Shirt printing, printing on glossy and metallic cards as well as art papers, then the PRINTiva maybe just the thing for you. For newsletters and alike, I don't think so.

Citizen PRINTiva 600C

Price: £439

Supplier: Citizen UK

Contact: 01753 584111

Verdict: 84%

Hewlett-Packard DeskJet 690

The 690 is the latest in a long line of personal DeskJets. It's a model I'm rather fond of as I started out with a DeskJet 500 many years ago. This new model is designed to produce photographic

quality colour images by using the optional HP Photo Cartridge and HP Photo Paper.

That's the theory anyway. In practice, I found little difference when I replaced the black ink cartridge for the Photo one. The biggest improvement came when printing on the semi gloss Photo paper but then that would apply if you also had the black cartridge installed instead of the Photo one.

When printing normal documents made up of text and graphics, I was disappointed with the results (in relation to those from a Colour Stylus 500 or Canon 610) although it has to be remembered that this printer is priced well below much of its opposition.

Even in the supposedly "600x600" mode, text was no where near as sharp as that from the Stylus or the DeskJet 870CXi.



It is probably acceptable though for those just starting out with a printer and although text is slightly disappointing, photos do come out quite well, although again, are not as good as those from the Epson Stylus or the 870CXi.

With a street price of under £220, the £690 is very well priced for a 4 colour ink-jet. I wouldn't say that the results from it when attached to an Amiga are as good as that from the Epson 500 (which is around £30 more expensive), but unless you are very fussy, you can't help but be impressed at what a printer so cheap can produce.

On the minus side, the design still incorporates a separate PSU, one of my pet hates because they have this knack of making life miserable when they get in the way, fall off the desk and all sorts of other things.

Hewlett-Packard DeskJet 690C

Price: £262

Supplier: Hewlett-Packard

Contact: 0990 47 47 47

Verdict: 86%

Hewlett-Packard LaserJet 6MP

Over the last six years, I have had the pleasure of using many Hewlett-Packard lasers and wouldn't choose anything else unless it could be proven that I would gain from making that choice. The reason I find HP lasers so agreeable is that I punish my HP lasers every day and they've all taken the punishment I dish out and are still taking it today.

So it was with great delight I tested the latest HP laser, the 6MP (PostScript version of the 6P). Looking a lot like its previous incarnation, the 5MP, version six of this popular personal printer has some interesting features.

First of all, it can print up to eight pages a minute, making it twice as fast as the 4MP I currently use. The toner cartridge in the 6MP (like the 5MP) also holds more toner (than previous models like the 4MP) with the manual telling me it's good for 4,500 sheets at 5% coverage. You won't get that in real use but it's good to know you won't need to change toner cartridges as often. This coming from someone who changes as many as two or three toner cartridges a day during heavy production.

Like the 5MP before it, the 6MP has the same design which I found was compact enough to sit on a small table above all the peripherals on the desk here. Attaching the cables is as usual, fiddly with annoying plastic covers having to be removed before the cables can be fitted. A well intentioned move by the designer but a pig in practice.

The LaserJet 6 also has no control panel, so software to control is essential. On the Amiga, we don't get the bells and whistles the software for the PC contains, but packages like Studio II and TurboPrint both enabled me to use the printer (Studio II seems better equipped for this).

The quality of output was as usual, up to HP's normal high standards although with the driver packages on the Amiga having got a lot better over the last few years, this is as much to do with the printer as the software driving it. Having said that, the quality in Postscript mode on the "M" model is also much improved over earlier models like the 4P but little different to the 5P.

Like the LaserJet 5, there is a manual paper feed which lets you feed the printer multiple sheets (up to 100). This came in handy when printing labels and envelopes as these cannot be placed in the cassette.

Both paper feeds (Cassette and manual) are quite reliable when printing single sided work but



"a 600 dpi printer with a hundred sheet **manual feed** that led to further development."

the 6MP I had, didn't like doing duplexing where both sides are printed by feeding the paper through twice. This may have been due to the new pick up rollers because the 4M Plus I have, hardly ever misfeeds when duplexing pages.

An important improvement is the increase in the duty cycle to 12,000 sheets a month, enough for most personal and small business users. To put your mind at rest, in case of trouble, the LaserJet 6 comes with a one year warranty upgradeable to three years.

A fairly significant upgrade although not to us on the Amiga, is the LaserJet's use of version 6 of the PCL printer control language. This is backwards compatible to version 5e and is supported by Studio II and TurboPrint 4.1. Both printing enhancement packages worked fine with the LaserJet 6 although given the choice, I would choose Studio II Professional as it seems to control the printer better.

LaserJet 6MP

Price: £845

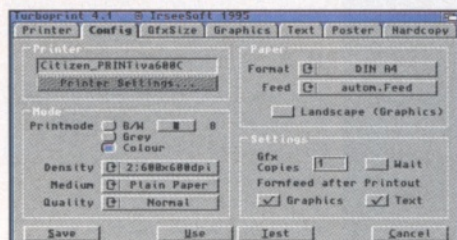
Supplier: Hewlett Packard

Contact: 0990 474747

Verdict: 91%

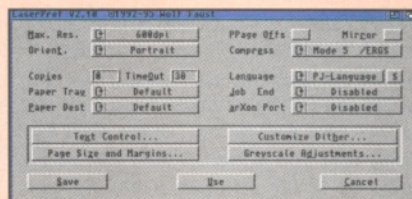


The TurboPrint panel has various "pages" for you to configure your printer, with this one letting you choose your model printer as well as many other aspects like printing to file and so on.

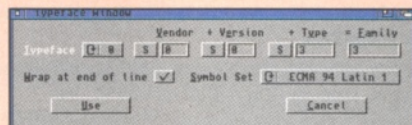


...printing enhancement applications like TurboPrint have many important functions like choosing the paper type, density and the colour mode.

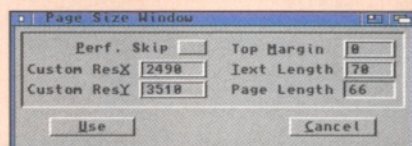
The Prefs panel



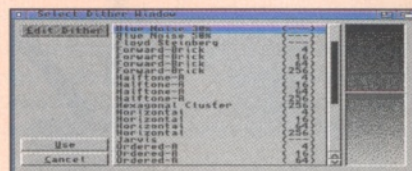
The Prefs panel for Studio contains functions which bring up other panels for you to use to fine tune your output.



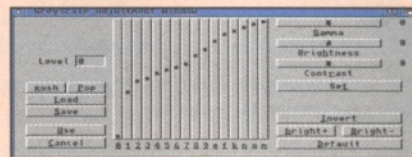
...like choosing the typeface to use with some text based word processors...



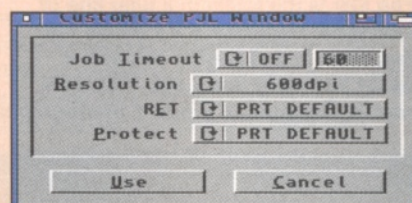
...or the size of the page...



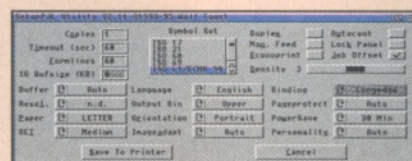
...even the dither used to render your graphics on page ...



...and this funny looking panel is where you can change the colour balance of your output...

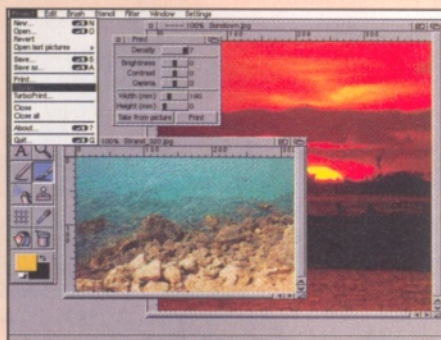


...now this is what I call fine tuning your LaserJet, essential these days with LaserJets not having a control panel on the printer itself...



...LaserJet users get to control their printers to a degree that standard Workbench users can only dream about...

Enhancing your prints



Programs such as Art Effect are now supporting print enhancement packages.

Many people think of a printing enhancement package as a printer driver, but it's much more than that. As well as providing bang up to date printer drivers for the latest printers, print enhancement packages like Studio II Professional and TurboPrint, also enhance the output quite considerably, especially if a lot of what you produce is graphics orientated.

You won't gain a lot if all you do is text, but when you have a picture of a muttley your favourite dog (or should that be cartoon character), then a print enhancement package will help you ensure that the colours in the image on the paper match closely those on-screen.

They will never be exact, but they will be closer than if you tried to print using the standard Workbench printer prefs functions.

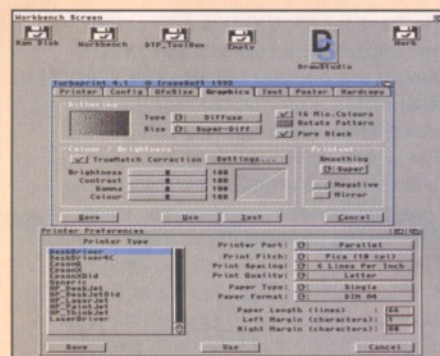


The quality of graphics from programs like DrawStudio is now as good as you'll get on any machine thanks to TurboPrint and Studio II Professional.

Most print enhancement packages will consist of three parts: printer drivers, print preferences functions and a picture printing application for printing pictures only. Unlike the PC or Macintosh, you can't always produce the best results printing pictures from an application like your word processor and so if all you want to do is print pictures, then using a dedicated application from TurboPrint or Studio II is the way to go.

The question is though, at almost fifty quid, which printing program do you go for? Both are closely matched, although I do find myself using TurboPrint for colour work and Studio II when using lasers. This is mainly because I don't have time to fiddle with the default settings of both programs.

Saying that, there are some other things you should consider. Studio II for example will work better with PageStream thanks to its special server link with PageStream. The same applies to ImageFX. Art Effects meanwhile will print direct to both TurboPrint and Studio II.



Compare the preferences available with an application like TurboPrint to those for a standard Workbench and you will see that TurboPrint wins by a long straight.

Because each package has its strengths, there is no right answer to which is better although doing a survey of many of the readers of my Amiga magazine, I found that Studio II was the most popular but found that many who had both, preferred TurboPrint, again for colour work.

Studio II Professional
HiSoft
0500 223 660

TurboPrint 4.1
Wizard Developments
01322 527 800

Hewlett-Packard DeskJet 400

One of the cheapest ways to get into colour printing is by buying a printer like the DeskJet 400. With a street price of £151.00 (colour £161), the 400 is one of the cheapest entry level printers there is. Initially, this printer was only available in Dixons, although I believe it is now widely sold in most electrical and computer stores.

The 400 looks very different to the other DeskJets available from HP in that the paper tray can be folded away when the printer isn't in use. As such, the printer has a very small foot print and the only thing that really spoils it, is that the power supply is a separate "brick" which can cause damage to unprotected footies.

There are few controls on the printer but then few are needed, especially if you have a package like Studio II or TurboPrint. You can use the printer with either a black ink cartridge or a 3 colour one (Cyan, Magenta and Yellow). Colour was probably acceptable to those who have never used colour before, being on par with the



Epson Stylus 200, while the black print cartridge produced very good text and greyscale images, especially for a printer this cheap. This is more to do with the enhancement software driving the printer than anything going on within the printer.

None of the printing packages I used to drive the DeskJet 400, mention it by name, but I had no problems using it with both Studio II and TurboPrint. Well almost no problems. There were dark lines noticeable where the strips output by the Amiga software overlap, but this I suspect is more an Amiga software problem than hardware. The banding varied from package to package and what print driver was being used.

Overall, the DeskJet 400 is a good buy for the budget conscience Amiga user although it is up against some stiff competition in the form of the Epson Stylus 200, which is a very similar printer but can take more paper and has a

"...the DeskJet 400 is a **budget** priced printer which produced **first-class** monochrome results and oh, by the way, can also print in **colour**..."

straighter paper path than the 400, where the media paper is fed from the front and comes back out the front having been turned around 180 degrees. It should be pointed out that the 400 does have a rear paper feed for single sheets. The best results came with Studio II.

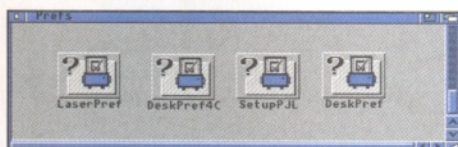
Hewlett-Packard DeskJet 400

Price: £151 (Colour £161)

Supplier: Hewlett-Packard

Contact: 0990 474747

Verdict: 86%



Studio II Prof comes with a number of different "Prefs" programs for different makes of printers as well as some utilities for configuring printers like LaserJets and Epson Colour Stylus's.

Hewlett-Packard DeskJet 870CXi

The DeskJet 870CXi is a new colour ink-jet printer from Hewlett-Packard replacing the popular HP DeskJet 850C. The 870CXi offers a number of significant improvements although few will benefit Amiga users. Improvements such as networking for example.

A speed increase has also been made possible by the use of a 20Mhz RISC processor enabling the printer to process incoming data more efficiently, contributing to a significant throughput increase. The speed of your page to the printer is thus quicker than with previous models but this speed is still more dependent on the processor speed of your Amiga than that in the printer. Print to disk and then send the pages to the printer, is one way of maximizing the speed increase although I didn't see the through-put that the press releases quoted.

The look of the printer hasn't changed much from previous models although at least this

model does have an integral power supply. Driving the DeskJet, none of the packages again mention the 870CXi by name, although both Studio and TurboPrint produced stunning results with it (I feel TurboPrint edged it in the quality stakes when printing from normal Amiga applications).

Black text at 600 dpi was almost laser like and colour photographs were very life like in their appearance. Overall, the DeskJet 870 performed very well and given the chance, I'd be happy to keep it here churning out colour documents, because like HP lasers, it does seem quite robust and the ink cartridges are much larger than those in the small DeskJets. With that robust feel, comes noise and plenty of it although with the stereo turned up, I soon managed to avoid hearing it at work.

With a street price of £350 (plus extra for your printing enhancement software), the 870CXi is only a little more expensive than a Colour Stylus 500 but would be better equipped to handle a heavy workload. That said, the new Canon 620 with 720 dpi and separate ink cartridges is also a contender although I didn't get to test it and so can't say just how well it compares.

Hewlett-Packard DeskJet 870CXi

Price: £420

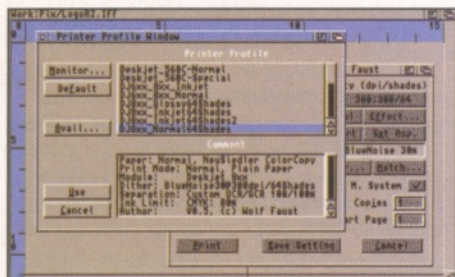
Supplier: Hewlett-Packard

Contact: 0990 47 47 47

Verdict: 92%



"...the 870CXi was giving some real stick in the two days I got to use it and overall, it produced **stunning** black and white results and **first rate** colour..."



Studio II Professional enables you access many of the special features in printers like the 800 series from Hewlett-Packard.

Other Printers

This was supposed to be a printer roundup of all the available products but printer manufacturers like Canon seem a bit stretched for review models at the time of writing which has meant that this has turned into a bit of a Hewlett-Packard benefit. That said, we do have information on other models available such as those from Epson and Canon.

We haven't reviewed Epson printers here because at the time of writing, there weren't any new models we haven't already reviewed in Amiga Shopper. Epson however, will be releasing some new heavyweight laser printers to take on the HP 5 series, so keep your eyes peeled for information on those in AF.

Epson Printers

Epson 500 Stylus (reviewed Issue 67):

Four colour ink-jet that is capable of 720 dpi. Produces superb results, especially on dedicated Epson high resolution papers. Well priced as well. Requires either Studio II Professional, EnPrint or TurboPrint.

Epson 200 Stylus (Reviewed in issue 70):

This is a dual personality printer that can be set up to print in black and white or colour by using different print heads and cartridges. The 200 is

priced much lower than the 500 but it should be remembered that the quality is not as good and the 500 is a true 720 dpi printer while the 200 is advertised as a 720 printer, but on the Amiga is restricted to 360 dpi. The 720 dpi on the PC is more a software hack than anything to do with the printer itself.

Epson 820:

For those wanting 720 dpi monochrome output, the 820 maybe just your thing. Like the Stylus 500, this is a true 720 dpi printer but its only for doing black and white.

Epson 1500:

An A2 printer with a colour option, 720 dpi output and a sheet feeder. This is quite an unusual printer compared to the usual type plotters used in CAD and other large format areas. The 1500, priced at around £590, will find favour with those who do posters and alike, although I haven't as yet seen whether it will work with the current crop of printer drivers on the Amiga. Certainly worth investigating because printers of this size at this price, are very scarce if available at all.

Canon Printers:

Canon BJC-240:

The 240 model replaces the BJC-210 and now uses Canons "revolutionary" new Photorealism

and Photo ink technologies. I haven't as yet been able to see how revolutionary this technology is by the way. The 240 is a true 360 by 360 dpi printer and comes with a 100 sheet paper feeder and has the 200 series usual small footprint. There is also a black cartridge available for monochrome printing.

Canon BJC-4550:

An A3 printer for under 500 pounds. The Canon BJC-4550 is a printer in the style of the 4000 series but enables you to print onto A3 paper, making it ideal for posters and proofing magazine spreads. Do remember that this hasn't been tested with Amiga software but Canon do produce some of the most Amiga compatible printers there are, so I don't think this will be a problem. The printer is a 360 dpi by 720 dpi although bear in mind that the 720 may be a smoothing function and not a true 720 dpi.

Canon BJC-620:

Picking up speed in the 600 series printers is the BJC-620, which we are told is twice as fast at printing photographs or colour intensive images as the 610 it replaces. Whether this applies to the Amiga I don't know. This is still a dedicated colour printer with separate ink cartridges for all colours making it economical to refill when a colour runs out. The 620 also has the 720 by 720 resolution of the 610. ■

Power

68030

Power on the cheap?

David Taylor finds out whether a sub-£100 accelerator can really be true or whether it's just a way of shifting sub-standard gear.

If someone came up to you in the street and tried to sell you a board for your A1200 which was known to have problems, would you be interested? I thought not. So, why would you want to buy a board from Power Computing that might be a pig in a poke? Well, this board contains a 68030 25Mhz chip, a 68882 and 4Mb RAM and all comes for less than £100 and it does work. Sort of.

This board has been around for a while but supposedly had problems working with PCMCIA slots – especially if you had more than the 4Mb RAM fitted. However, not everybody desires to make use of the PCMCIA slot. The Squirrel and its successor the Surfin' Squirrel have proved very popular SCSI adapters and some people have CD-ROM drives that fit straight into the slot, if not you may never use it. (the PCMCIA slot, is the credit card type one on the left of your Amiga.)

The question is, if this is a power consumption problem, could you also use the IDE expansion kits or the DataFlyer SCSI kit which both fit onto and expand the internal IDE port. If this is the case, and the card doesn't have a SCSI module option like some cards,

then the expandability of your machine is severely limited.

“The price of RAM has been falling steadily for the past year.”

The reason the board is now available so cheaply is not solely down to these possible problems. The price of RAM has been falling steadily for the last year and you can now pick up 4Mb SIMMs for under £20.

When we got the board and tried it out with a machine it booted up fine. Looking good. As you'd expect, a 68030 at 25Mhz runs about five times as fast as a standard A1200 and the extra 4Mb is enough to transform your machine. In fact, I only have an extra 4Mb in my machine normally and whenever I need any more I make use of virtual memory. It's not ideal, and more RAM is always welcome, but in general use you won't need it. The way things are going though,

you should have more memory because programs are going to continue to get higher system requirements. These do tend to be graphics programs, DTP and 3D rendering but if you have these programs running, albeit slowly and with difficulty, on a standard A1200, then the difference with this processor and extra RAM will be incredible.

Think about whether you want to continue using these programs or whether you'd want to upgrade. You can get this board with 8Mb which would make it a 10Mb machine – enough for most people – but you then need to keep in mind the problems mentioned previously.

Another problem came to light when we tested the card in a second machine. The card itself is fairly short and stocky and it can be tight getting it into the trapdoor and forcing it closed. In fact, the door had to be left off which is hardly satisfactory. More worrying was the fact that with the board fitted, the hard drive wasn't recognised. Although it powered up and started to spin, the machine wouldn't boot the drive and didn't list it in the system diagnostic.

So it seems there might be problems with some hard drives and this card. The drive was a JTS 750Mb drive, which is large but not a big power user. To be sure we removed the extra floppy and took off the SIMM and set the jumpers. It still refused to boot with the hard drive, although the board was recognised.

With all of this to digest, the choice about buying one of these is entirely up to you. We can't advise one way or another (hence the lack of verdict). If it works on your machine and won't cause expansion problems, then it is an incredible bargain that can push your system into the future. If it doesn't then there's no point. Maybe Power will guarantee that you can return the board for a full, no hassle refund. (If the board is faulty and isn't fit for the purpose it was sold, then a refund is within your rights anyway). If they will, then you've nothing to lose. ■

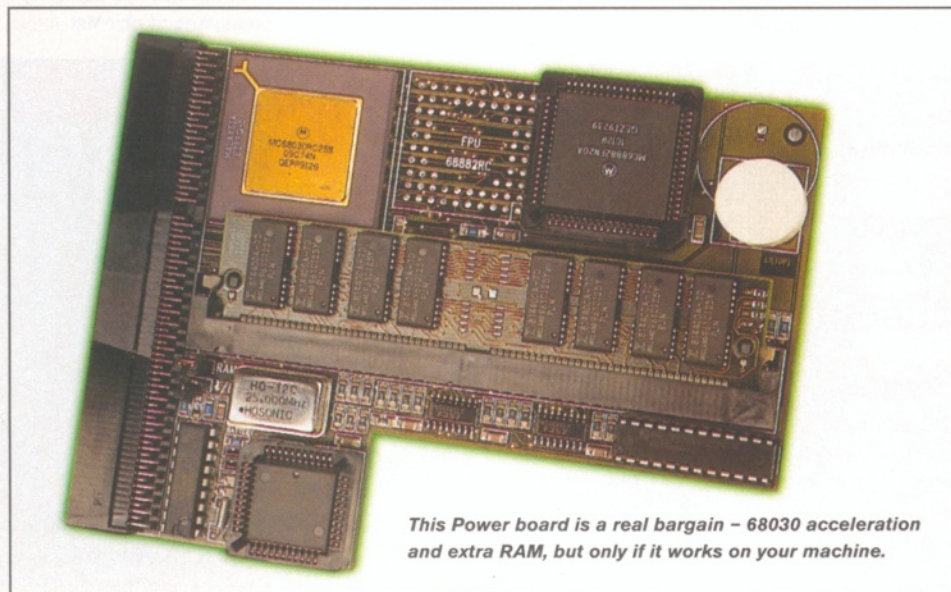
Power 68030

Price: £99

Supplier: Power Computing

Contact: 01234 273000

Verdict: N/A



This Power board is a real bargain – 68030 acceleration and extra RAM, but only if it works on your machine.

DrawStudio

DON'T FORGET

that the demo of this amazing program can be found on this month's Coverdisk.

Is it a drawing package? Is it a paint program? Is it a DTP package? Is it a structured drawing package? No, it's all of them, as David Taylor discovers.

There is always a need among reviewers to be able to label something. It makes our lives easier because we know that readers will have a common point of reference that means they'll know what we are talking about. DrawStudio doesn't let you do this because it isn't any single package – it is a versatile program that defies pigeon holing.

First and foremost, it is an art program. It's not a paint package, in that there's no animation or cutting of brushes. However, you can draw some very complex images. It works on the obvious supposition that all images are made up of lines and colours. You can therefore design a picture (and the use of boxes, fills, curves and lines makes it feel much more like designing than drawing) using any number of them.

Object Based Approach

Every box, circle, line and curve is an object. Each object has its own set of attributes and can be kept separate from other objects. This way, you can re-size and adjust any object, changing its colour, line thickness and fill type. Working with them you can build up your picture, by placing them over each other – build up a wheel from circles and squares for instance. When you have a component of your picture ready, you can group all of the objects



The package can warp objects so powerfully for use within a picture that it outstrips all other packages for this on the Amiga.

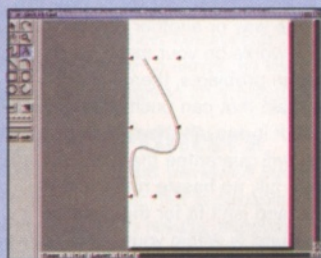
together to make a single object for ease of use within the rest of the picture.

This form of building relies on the object based approach to drawing that the program takes. As it has been discussed in depth in our preview last month and also in our Coverdisk pages this month, we'll not go into too much depth. It works brilliantly and because it makes it

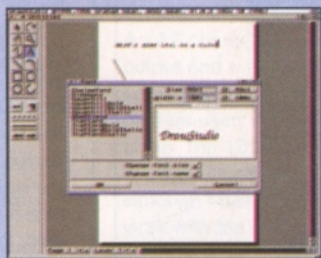
so easy to correct mistakes when you can see more of the picture emerge, it means that almost anyone can persevere and create complex images.

Filling objects can be done through the attributes for the object and you can have no fill, or set colours – colours can even be made semi-transparent so that parts of objects

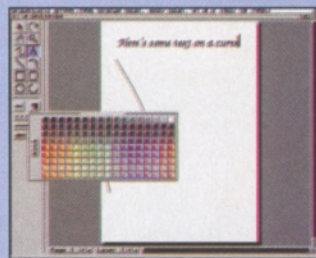
Getting to grips with some of the features...



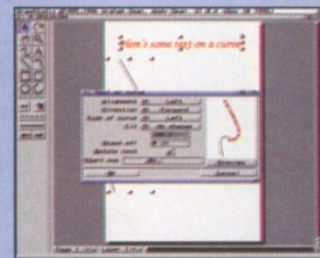
1) Draw your line and make it as curvaceous as you like – this is an ideal time to use the bezier curve tool that allows the creation of smooth curves.



2) Choose a font for the text from the Font menu item and type the text into a self-sizing text box.



3) Select a colour for the text. Make sure that the display type is set to a suitable buffer if you want to see it in colour on screen – otherwise it will appear 1-bit.



4) Select the text box and the curve (use shift to select more than one object at once). Then choose Text on a curve and the text will be fitted around the curve.

beneath can be seen, or bitmap images. You can import images to inside the object and have them either tiled or stretched to fit. Two minor constraints apply – bitmap fills cannot be made semi-transparent and you cannot import large objects and select a part of them. The second part makes you see why this package is a supplement to paint programs and image manipulators, not a replacement.

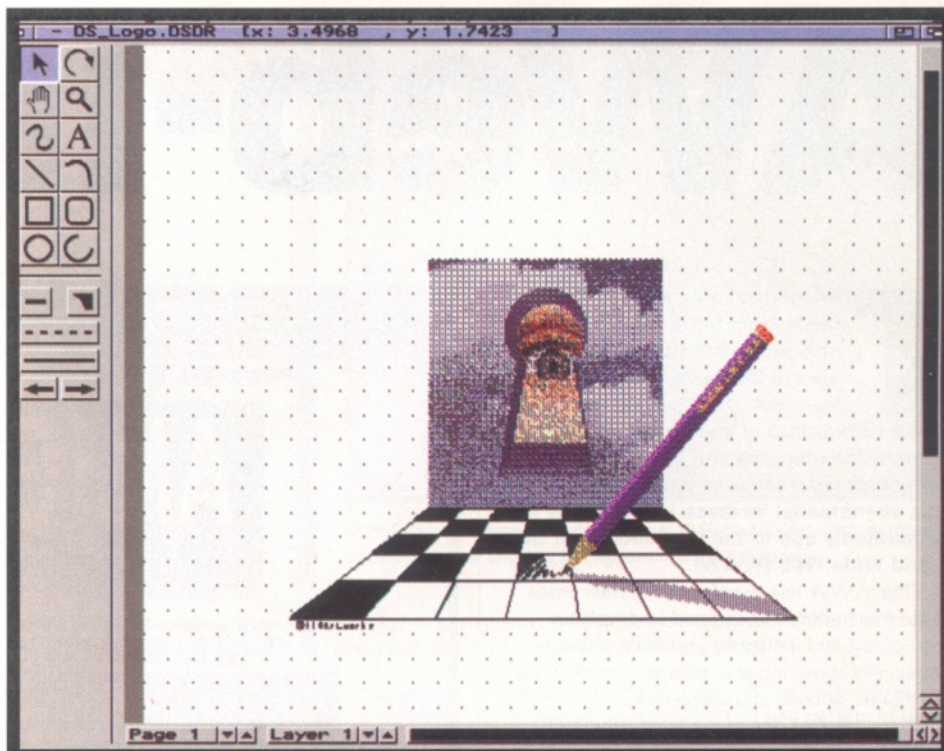
Painters' progress

The program's strengths go beyond the simple drawing area and thankfully, it isn't just that it can do more – it has truly powerful features in other areas. It's text handling is excellent, allowing you to create very funky looking text on your pictures very easily – as you can see below. Whether you want to think of this as a simple DTP package for pictures or as a program that can do some very simple DTP, is up to you. There is no doubt that it would be an excellent choice for designing a poster, but it couldn't be used for booklet layouts. As such, it also must appeal to video titlers with a chance to develop some stunning effects, although it might be a bit limited because of the stationary side.

The program does not make use of Amiga bitmap fonts, only Adobe Type 1 fonts. There are plenty of these around and some are supplied (other types aren't supported for reasons of quality and stability). There were a couple of problems when using the text on a curve feature – if the stretch to fit option was used it didn't seem to actually do what it was supposed to, so I found I had to choose the correct size font for the curve beforehand. When fiddling around with this, the machine did crash once, so I wonder whether there may still be a bug in there somewhere.

King ARexx

As an added bonus there is ARexx support within the program and it is very useful. A set of predefined scripts are included which allow you to do things like add shadows or create big explosion type objects. Obviously you can also create your own scripts. These scripts are useful, but I do wish that there had been some



DrawStudio reaches a release version just in time for this issue – so find out what it can do for you.

more of them. As LH Publishing are planning new filters for the program, which will be made freely available, perhaps more scripts will be added as well.

There is so much to this program, that it's almost impossible to know where to start, but you can explore much of it in the demo. One thing you don't get to see is the exporting of pictures or objects as bitmaps or EPSs so bear in mind you can do that as well as saving out DrawStudio format projects. Remember that there have been quite some changes made since the demo, so there is a lot more to it than you'll find in there.

The program requires an O20 and there is an optimised version for those with an FPU. Workbench 2.04 and MUI are required, but a higher spec machine than the bare minimum is best. The program also comes with some disks of clipart to get you started. CD owners obviously get even more. MUI does come

supplied with the package if you don't already have it. There is an in-depth manual that guides you through all the program's features, although it is fairly intuitive.

This is a quality product with masses of uses and I hope that people have the sense to buy it. I'm glad we got to review it before the end of Amiga Shopper, but I do worry that if it doesn't sell as well as it should, then we may see another developer leave the Amiga. There is doubtless a decline in the Amiga market, but products like this show why the machine still has a future for its dedicated users. ■

DrawStudio

Price: Floppy £59.95
CD-ROM £79.95

Supplier: LH Publishing

Contact: 01908 370230

Verdict: 92%

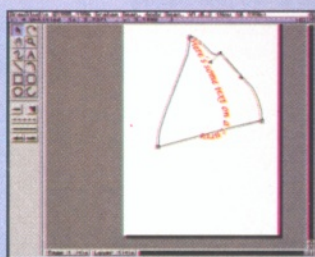
Star buy



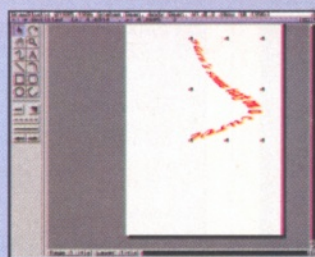
Getting to grips cont...



5) The text will fit on the curve. Now select the curve box and delete it, leaving the text in the shape. The text will be made up of many objects now, so select the whole lot and group them together.



6) The new object can now be warped, as any other object can, so select the warp and use the "Envelope" feature to be able to twist the text as you want.



7) With the text in place, you can treat it as a normal object and get on with the rest of the image.



8) Especially useful is the merging of projects as other projects can be imported at a scaled size of your definition.

AWeb-II

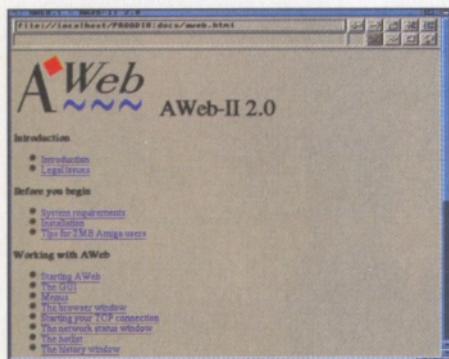
The latest version of this popular web browser hosts a range of new features but how well does it compare with its competitors?

The Internet may well be one of the hottest hang-outs nowadays, but this wasn't always the case. The Internet has been transformed from a nerds' retreat into an invaluable information resource and one of the fastest growing areas of entertainment. This phenomenal increase in popularity is undoubtedly due to the introduction of the World Wide Web (WWW).

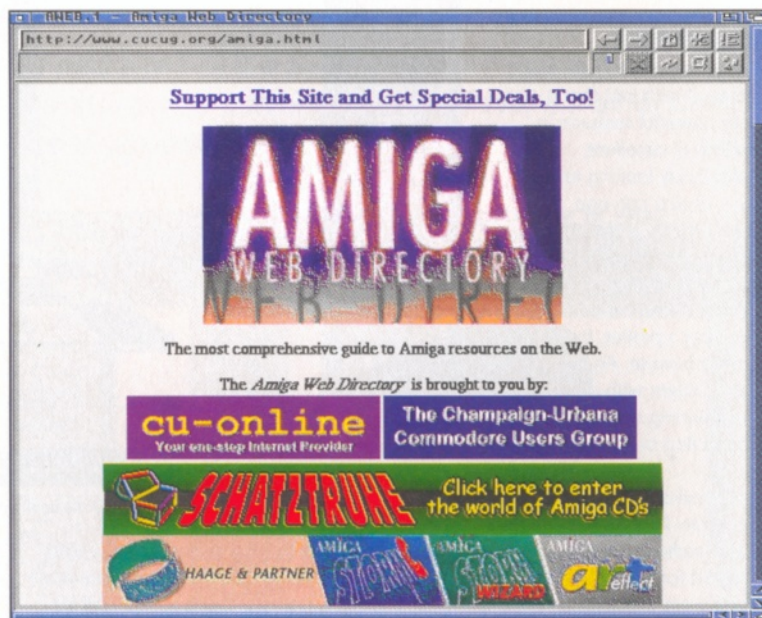
The WWW has transformed certain areas of the Internet from boring and inaccessible lines of text and unfriendly protocols, into graphically appealing and intuitive combinations of pictures, sounds and animations. This has made the Internet one of the most important areas of personal computing and the Amiga has not been left behind in the head-long rush on to the Information Super-highway.

While it can't be said that the Amiga has been spoilt for choice, the dedication of most users has ensured that it has been furnished with all the tools it needs to exploit most areas of the Internet. However, up until recently, the Amiga has really only had one web-browser – AMosaic. In the last few months though, the Amiga has experienced a mini avalanche of commercial browsers, and the latest to add its weight to the influx of programs is the newest version of AWeb.

As with IBrowse the program has been designed to work with a wide range of TCP stacks. If you are new to this area of computing, a TCP stack is a protocol (think of it as a language) necessary for your computer to be able to access the WWW. You will need to buy or download one to use the program to its fullest. The program will work with the popular AmiTCP, Termite TCP, I-Net225, AS-225 and other compatible stacks – although it has some weird moments with Termite TCP. However even without a TCP stack you can still use it to view local files.



If you need a helping hand using the program then look no further than the on-line documentation.



AWeb has no trouble dealing with colourful and image-laden web-pages as it can use most screenmodes.

One of the things that has still managed to fend off many a prospective Internet-user has been the difficulty of setting up the necessary programs. AWeb has opted for a standard Installer-based installation that shouldn't be too demanding for anyone with a fair understanding of the Amiga and the way it works.

You will be asked a few questions to get everything sorted out, but most aspects of the program are automatically dealt with for you, which is just as well as the modular design of the program could easily allow inexperienced users to miss out vital components or have them installed to the wrong place.

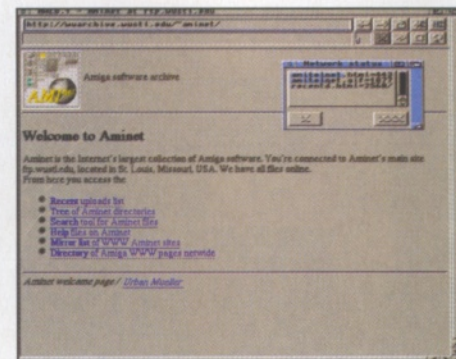
As the program only comes on two floppies, the whole installation process only takes a few minutes and doesn't require a great deal of disk space. The program's only requirements are OS 3, 2Mb of RAM (some Fast RAM helps a lot of course), DataTypes – for viewing images (JPEG

and GIF DataTypes are a must) and some classes from the Class Act kit which have been included. Although the documentation that accompanies the program has some fine tips on using AWeb effectively on a 2Mb machine, the program, like most others, will perform a lot better with more RAM and a fast processor.

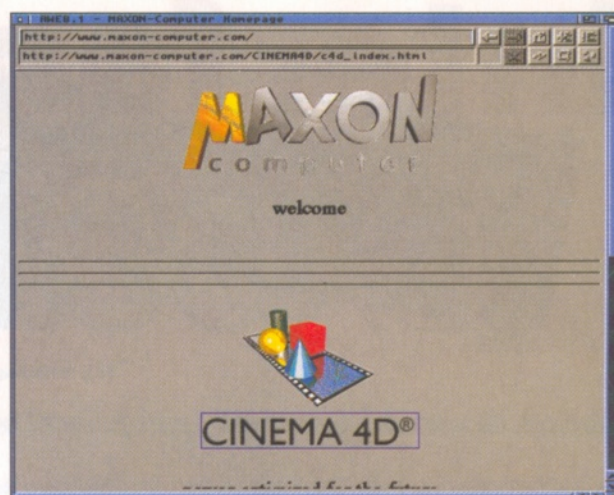
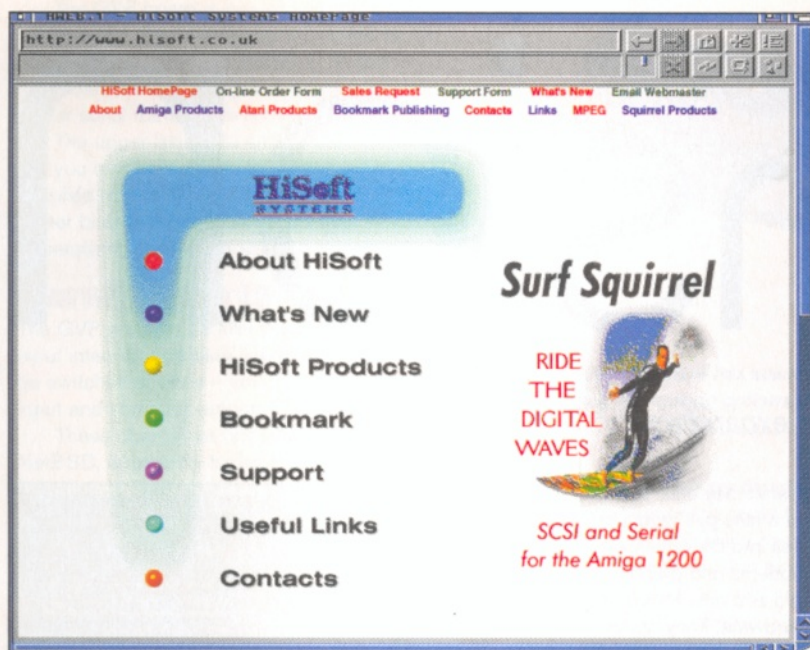
Once the program is installed, along with the DataTypes and TCP stack, you're ready to surf the WWW. Of course, as with most aspects of computing, things are never as straight-forward as might be expected on the Internet. There are lots of different protocols and even variations of protocols and HTML, the formatting language of WWW documents, is no exception. At the last count HTML was up to version 3, although that's probably changed by now. AWeb has full support for HTML-2 and partial support for most of the important features found in HTML-3. This gives it pretty much the



You can change the default images used by AWeb to anything you like, so long as you place the image in the right directory



As AWeb enables you to load other documents as you make new links the Network status window is very handy.



AWeb has full support for transparent GIFs so that certain images appear cut out and the background shows through.

It's easy to get support from Amiga-developers on-line. You can download software updates and e-mail queries.

same level of compatibility as several PC and Mac browsers.

Given the rate of change, it's not surprising that many HTML-authoring packages can produce the occasional quirk on a page. This can result in pages appearing quite "mashed-up" and sometimes almost readable. It would seem that AWeb's designers (AmiTriX Developments) have encountered their fair share of "unique" web-pages as they have built-in a special feature to try and resolve this irritating problem, called compatible mode.

If you are browsing the WWW and come across a page that contains some bad HTML codes – usually made evident by the page appearing screwed-up – you can simply switch to compatible mode. This mode will try and iron-out the bugs in the page so that it is displayed correctly. If you use this mode on a normal page though, it will screw it up so be sure to switch back to the normal mode.

Another niggling pain that frequent Internet-users sometimes come across is User Authorization. On certain sites you are required to register with the site before you can view any of the documents or files (like FutureNet). The trouble is that you usually have to enter your details every time you visit a site. AWeb can take note of the sites which require authorization

"The simple no-nonsense interface typifies the program..."

and will store your user ID and password so that the next time you want to access a document or another in the same area of the server you don't have to type in your details again and again.

Because of its graphical nature, support for different graphics formats is a particularly important for a browser. Most Amiga browsers either have support for different graphics built-in or rely on DataTypes to provide the necessary support. AWeb has support for transparent GIFs, so that you don't get that ugly blocky look when icons and images are overlaid on background pictures.

The quality of the images that are displayed obviously depends on the screenmode in which they are being displayed. AWeb can be opened on to any of your Workbench's supported screenmodes. So if you have a 24-bit graphics card with Workbench emulation or CyberGfx support and the correct DataType you can view pages in 24-bit true colour, which is a good thing as many of today's colourful web pages look terrible in 256-colours.

However it can be a real pain sometimes when visiting a very graphical page when you're in a hurry as you have to wait for the images to load in for the page to make any sense. Most browsers have the ability to stop images from loading in automatically, but the links contained on many pages are graphic-based. AWeb can be instructed to load only link images, which are usually quite small, and thereby save you a great deal of time without wrecking the page.

When you are online time is money and you don't want to be hanging about unnecessarily. To limit the time you spend twiddling your thumbs as you wait for a page to load, AWeb

makes use of extensive internal multitasking. This enables asynchronous and parallel network access. You can even follow a link from one page to another as the first is still loading.

An important feature for any browser is support for as many protocols as possible. AWeb has internal support for the Gopher and HTTP protocols and can use external programs to access FTP, Mail, Telnet and News which covers most types of sites on the Internet. Although this is not yet fully implemented at the moment, these features should be available in version 2.1 which should be available as you read this review.

Keeping track of your favourite sites is another important feature. Most programs can store a hotlist of sites, but AWeb can also group entries so that similar sites come together. You can also import hotlists from other browsers.

Most of the designers of browsers go to great lengths to make their program's interface appealing, bright and colourful. In contrast AWeb's design seems to have taken a minimalist approach. There are no spinning logos or large fancy buttons. Most of the functions are accessed from menus while the nine most commonly used are available as small icons at the top left of the screen. The rest of the top of the screen is occupied by two text gadgets – the top one holds the current page address and the bottom one doubles up as a display for the address of the link that the pointer is over and as progress bar.

The simple no-nonsense interface typifies the program as a whole. It may not look as attractive as other browsers and it doesn't have all the fancy features or extensive options of a program like IBrowse, but it does have all the tools it needs to do its job and it does that job well. ■

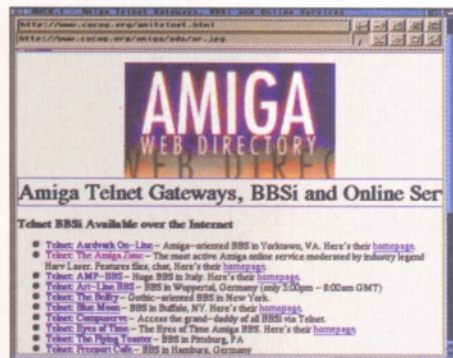
AWeb-II

Price: £39.95

Supplier: Blittersoft

Contact: 01908 261466

Verdict: 80%



Although not fully implemented at the moment, AWeb-2.1 will have support for TelNet, FTP and Newsgroups.

Interface Expansion

Simon Goodwin tests serial and parallel port expanders for Zorro Amigas.

Every Amiga has a versatile serial and parallel port. They can link to printers, modems, scanners, MIDI instruments and effects, samplers and networks. It's clear that you don't have to expand your Amiga far before you could do with some more of these useful ports.

What if you need to use your printer and parallel-port scanner at the same time? Perhaps you own a graphics tablet or serial mouse, and want to use it to control your modem. Switch boxes are not much help. What you really need is extra ports.

The obvious way to add ports is with Zorro expansion cards. Options are the Multiface 3 from BSC of Germany, distributed by Golden Image in the UK, and GVP's IOExtender, sold here by Power Computing. The price and facilities of these boards are similar, but they differ in their workings and software support.

Connectors

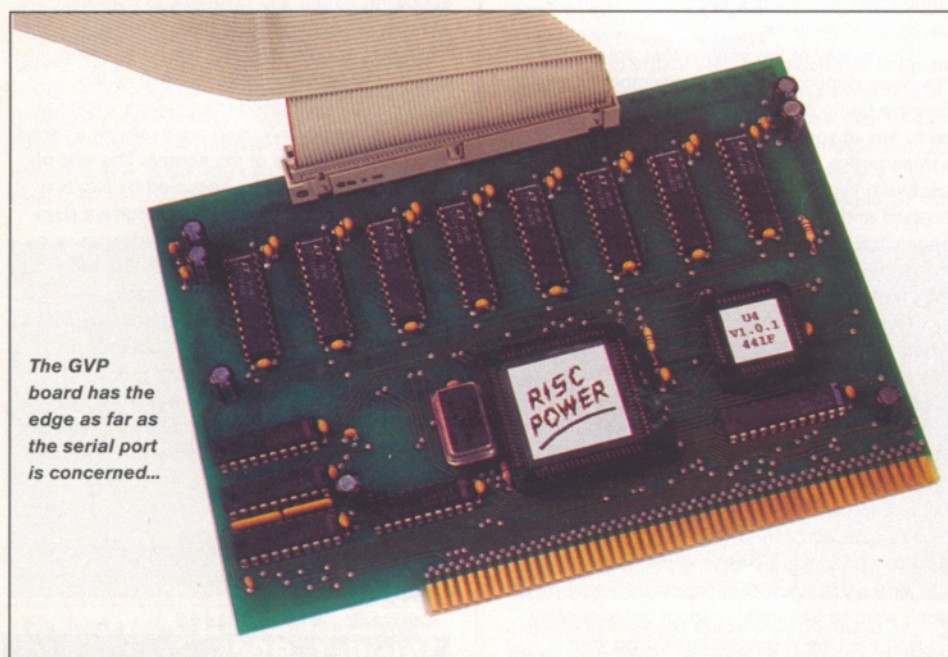
Both boards are compatible with all Zorro 2 Amigas, from the old A1500 to the latest A4000T. Each adds one parallel and two serial ports, and you can fit several boards at once if you need more.

On the back panel they offer a 25 pin parallel socket and a nine pin serial port. A serial connector squeezes into the remaining space on the panel. Most modems and graphics tablets are made to suit old and new PCs as well as standard Amiga hardware. They come with both nine and 25-pin leads, and plug straight in to either expansion port.

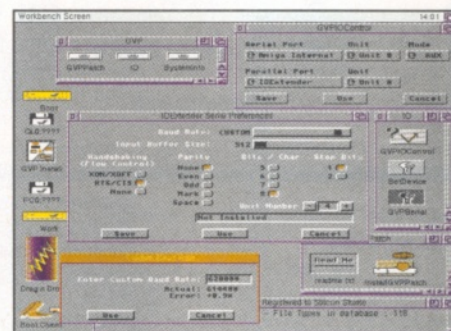
Both cards include two distinct serial ports, but there's only room for one serial socket at the card edge. To use the second serial port you must connect a flying lead to the Zorro card, and find some way of presenting an extra connector to the outside world.

The Multiface comes with a full-sized 25-pin second serial socket on a metal card edge. The second serial connector is not normally included by GVP, but if you need one Power Computing can supply a similar card-edge plate, with either a nine or 25-pin socket, for an extra tenner.

These card edge plates occupy an otherwise-unused Zorro slot. Alternatively you could remove the metal plate and connect the socket to an internal interface. I have a Power Computing MIDI interface fitted inside my MicroNik tower, so I connected the flying lead from the second serial port to that, keeping my Zorro expansion options open.



The GVP board has the edge as far as the serial port is concerned...



The software allows you to set the preferences for the serial port, adjusting the controls used.

Documentation

GVP's IO Extender User's Guide is a bundle of 50 pages, tacked together by a single staple. There is no pin-out information for any of the connectors – an extraordinary omission. When I mentioned this to Power they replied 'it's standard' – which is certainly not the case for any Amiga.

The Multiface manual is a 200 page paperback. The text is well written and presented, covering both hardware and software. Connectors and adapters are explained. The only gaps are cursory discussion of MIDI, and no mention of alternate operating systems such as NetBSD, Qdos and Mac emulation.

Serial hardware

The Multiface 3 is based on standard Motorola interface chips. The serial ports run at a maximum of 115200 baud, just about right for today's fastest modems. This relies on the system being able to respond to 'interrupt' signals promptly, and that can be a problem with some disk interfaces – notably the DKB 4091, Warp Engine and old GVP modems.

The Multiface does not support the MIDI rate of 31250 baud. Apparently you can fix this by replacing the crystal on the board but this requires soldering and you lose support for standard serial rates above 9600 baud. I swapped the crystal, but still could not get MIDI to work.

GVP have included extra hardware to generate the peculiar 31250 baud MIDI signals, but you still need software that can access alternative serial ports. Most sequencers and trackers only support the standard port.

The GVP board is bigger and more complicated. The interfacing is handled by an ST16552 chip, this can buffer up to sixteen bytes before interrupting the Amiga, allowing higher serial transfer rates on a busy machine.

The upper limit is 614400 baud. To achieve this you may have to run the 'GVPatch' supplied to throttle back greedy SCSI devices. Better boards like the GVP 060 and Cyberstorm 2 work fine without patching.

Parallel ports

The GVP restricts parallel input as there's no input interrupt and data line directions must all be switched at once – you can't use some for input and some for output.

These boards are not yet usable from NetBSD, apparently for want of technical information. GVP supply port addresses in a readme file, and I found the ST16552 manual on the Web, but that's the limits of GVP and Power Computing's support for the IO Extender.

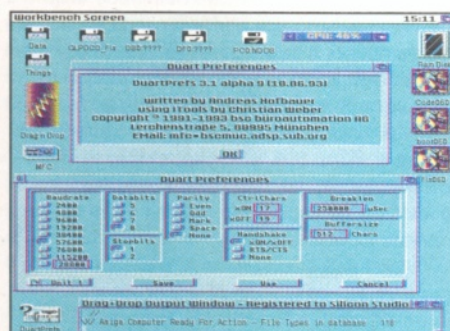
The GVP has a configuration jumper to supply +5 volts on pin 14 of the parallel port. This suits Amiga peripherals, but may upset PC ones, which is why it's configurable.

“These boards are **well made, easy** to install and work well for parallel printing and serial communications.”

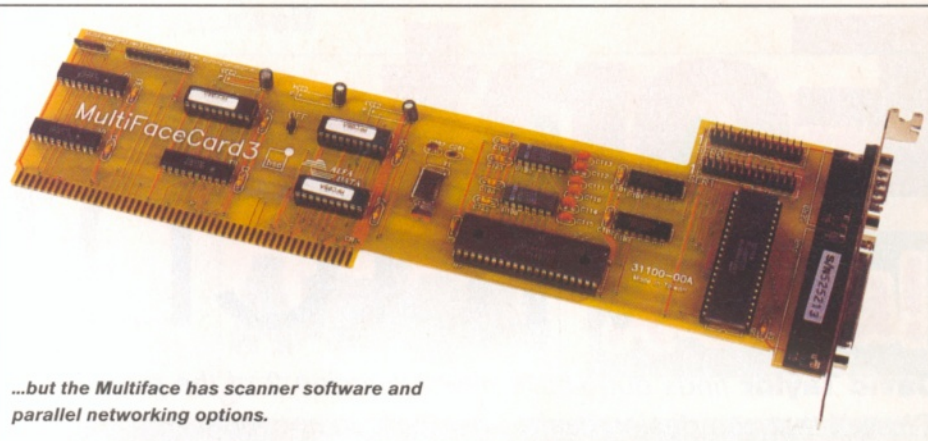
The general-purpose Multiface chips are hard to program without specific address and pin assignment details. Like GVP, AB-Union did not respond to technical enquiries, and their BBS is entirely in German. It seems the only way we'll get new drivers is if someone disassembles the existing ones.

Software

Both cards come with quick, friendly installation software. It adds files to your Workbench directories as the boards do not include ROMs. The installer copies handlers, drivers and icons, and a device driver in the Expansion directory. There are three ways for software to address an



Again, you have the choice of adjusting the settings to get the best from the serial port.



...but the Multiface has scanner software and parallel networking options.

interface port. It can go directly to the hardware, use a standard device name like `serial.device` or `SER:`, or allow the device name to be configured. Programs that hit the metal can only work with the motherboard ports, unless rewritten. GVP's own Digital Sound Studio and Power Computing's PowerScan fall into this category.

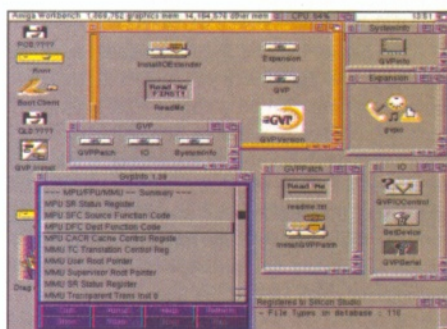
The Multiface has extra software for Epson GT parallel port scanners, and networking between Amigas. Networking is supported by the standard PARnet, for the internal parallel port, and a special version for the Multiface equivalent.

The 'PIAnet' driver is claimed to be substantially faster than standard. It transferred around 60K per second between two A4000/060s with Multiface 3s – useful but a bit disappointing as the manual claimed 100K per second between 68030 machines. But it does leave the standard port free for software that requires it.

Programs that ask for devices by name could be patched to use another name, and thus re-directed to Zorro. You could edit the code directly if feeling brave, or let the bundled software intercept hardware requests and pass them on to an alternative device.

BSC's MapDevice works from the Shell or your startup. It can intercept and redirect serial or parallel port requests. You can't easily use two programs that ask for the same device name at once, even though you've got two ports that could respond to that name. GPIOControl is the IO Extender's equivalent, accessed from a preferences icon rather than shell commands.

For best results you need software configurable to open the port with a new name



The GVP board comes with software patches to enable the board to function.

or unit number. ShapeShifter, communications packages such as Term and NComm, and Aminet's numerous serial mouse and tablet drivers fall into this system-friendly category. Once configured to use `gvpser.device` or `uart.device` you can potentially run a dozen at once, all on different ports.

Both boards come with configuration software similar to Commodore's Serial preferences, but with control over the unit (port) numbers as well as speed, buffer size and data format. BSC let you set the flow control characters, and the time to signal a line break.

GVP let you select the MIDI rate and custom baud rates, showing the nearest speed it can manage. Anything within a few per cent (half a bit period) should work fine.

Conclusion

These boards are well made, easy to install and work well for parallel printing and serial communications. But they're no help with programs that write directly to the Amiga hardware.

The GVP IO Extender has the best serial ports, the Multiface 3 benefits from parallel networking and Epson scanner software. Its serial ports are slower, although still superior to Commodore's.

Price-wise, there's little to choose between them, once you've added the cost of the extra connector needed to bring the GVP board up to full specification. They work well with system-friendly software, and their main weakness is lack of support for obscure hardware and alien software like NetBSD and ShapeShifter. Alas this is unlikely to change unless the importers or manufacturers sharpen up their act when it comes to technical support. ■

BSC Multiface 3

Price: £79.95

Supplier: Golden Image

Contact: 0181 900 9291

Verdict: 74%

GVP IOExtender

Price: £69.95

(second serial connector £10)

Supplier: Power Computing

Contact: 01234 273000

Verdict: 78%

Font Machine 2

David Taylor finds out what's new in version 2 of the program from Class X that can design flashy new fonts in seconds.

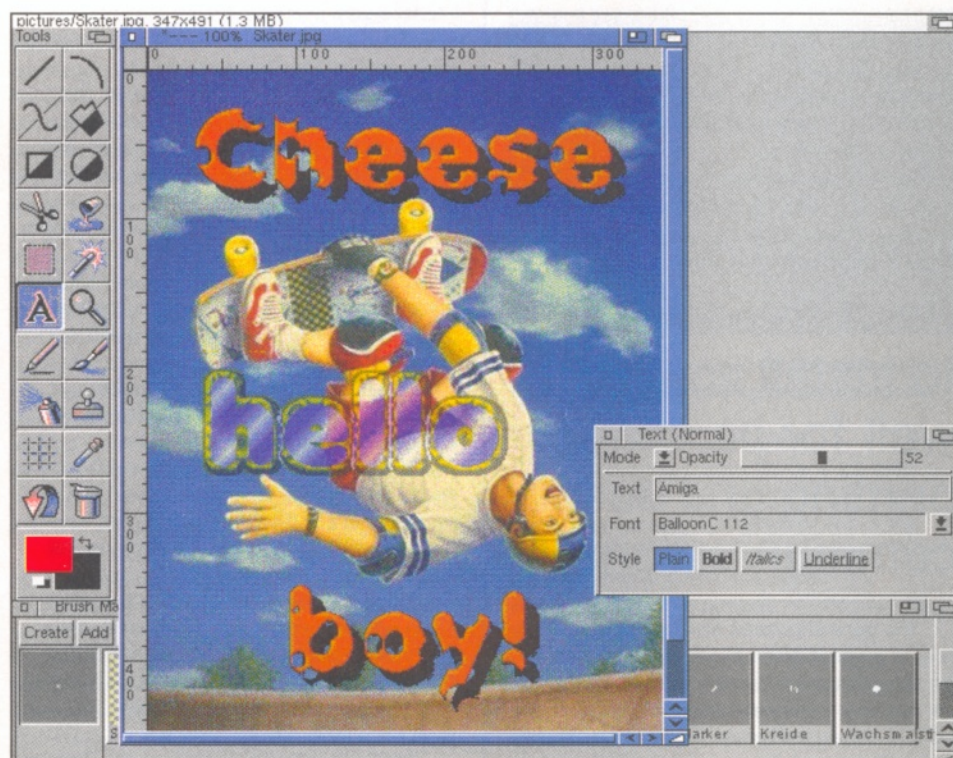
Class X have never been a company to stand still. Last month it was a new revision of X-DVE and this month we've got a whole new version of Font Machine. Font Machine is a program that can render colour Amiga fonts quickly and easily. This format of font is not one widely used by Amiga owners, but it is ideal for graphics users. Hence the fact that this format is supported by three of the most important programs in this area: X-DVE itself (version 2.5+), Personal Paint and Art Effect. Within Personal Paint there seems to be a glitch with the palette though.

Since the last version of Font Machine, Class X have taken a look at the interface and decided to try and make it a little more accessible. I have to say I hardly found it difficult in the first place – one of the beauties of their products has always been their ease of use. Still, while the basic layout has remained the same, there have been updates, including the ability to quickly choose the colour for each of the effects separately and have the colour check kept up in the box next to the effect (or both colours if the effect uses more than one). All you need to do to select the colour for the effect is choose it from the palette and then click in the effect's colour box.

Most noticeable on the new interface of course is the new Emboss effect. When I first added it to the font with the direction set straight up, I wasn't particularly impressed, but when I switched to a diagonal the whole font came alive. Needless to say, it quickly became one of my favourites. It's not an easy effect to



The difference between the old and new interface (version 1 above and version 2 below) is considerable, if not eye catching.



The fonts can be used in the Art Effects package and look great on screen. Their bitmap nature can betray quality though. Notice that the effect on the font has made the holes transparent – cool!

explain, because it does exactly what it says it does. You really have to play with it for a while and the effect on its own (as shown in the diagram for reference purposes) doesn't do it justice. When added to a font with a border and texture, it really does look as if the font is embossed – as if stamped on the screen and slightly raised.

The Bevel, 3D and Shadow effects are still here and add the effects you'd expect. As before, textures can be a choice from bitmap pictures, plasma or patterns (the latter two are generated by the program according to user input and a palette choice). There is a difference in the way that textures are added to the fonts though. There is now a random mapping choice which will ensure the texture is moved around behind the fonts so that the same parts aren't visible behind the letters. It makes the font look a lot more natural. Before, when a picture was added as a texture, although it looked great, the repetition did spoil the effect, especially when

the picture was a texture like granite or wood. This new feature makes it look much more as if the font has been carved from a larger block, if you'll follow the metaphor.

To help with the use of all of these new features, which will involve much more colour on a font, the preferences have been redone so they are easier to use and you can easily adjust the number of colours used. To make the most of it though, there is a palette optimisation tool to make sure that the borders, fonts and textures make the best use of the colours. There is also a remap tool which appears in the Font section, but although ticked it appeared constantly greyed out, so it didn't seem to operate for some reason.

Another big addition is ARexx support. The program comes with an ARexx script for a Shell in which you can test the ARexx scripts. There are not actually many scripts supplied and I would like to have seen a few more, but a couple of them show the use ARexx has and if

Program features – take a look for yourself



1

5 Antialiasing helps to make the fonts look smoother around the edges by reducing the "jaggies" – using pixels to fill in the edges.



2

6 Several different mapping options make the texture or fill appear differently on the font face.



3



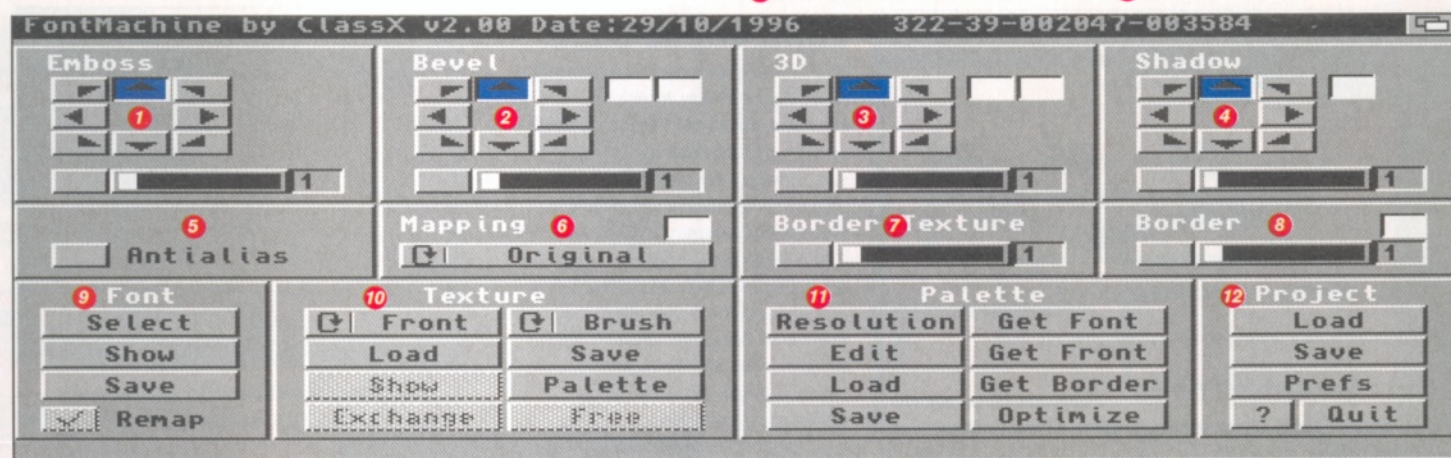
4



7



8

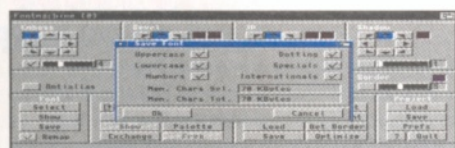


9 The font can simply be selected from this part using a requester. When you are ready to render the whole font with effects, simply save it out here and it will start the process.

10 The textures can be bitmaps loaded in, or plasma or patterns generated by the program. Textures can be added to the front of the font or the border.

11 There is a fair amount of palette adjustment that can be made. You can load in ones, grab them from various parts of the font and edit them manually.

12 If you want to keep the font in a format that you can adjust later, you can save it as a project. This also makes it easy for you to add the same effects to different fonts. There are prefs for the program and information on the current project.



You can now only render subsets of the font to save time from creating non-standard characters that won't be used.

you are an ARexx guru then its a feature worth having. The rest of us can certainly make use of a couple of the scripts. There's one which can take Projects created in version 1 of Font Machine and convert them to the newer version 2 project format to save you some work. There's also one to show all the projects in the projects drawer and two interactive scripts that act as tutorials. These are excellent leading you through the creation of fonts using all of the tools.

When actually creating the fonts using the Save button that renders the fonts and then saves them straight out, you can now select subsets of the fonts. If you have a font with a lot of processor intensive work – textures on the front and border and other effects too, then it may take quite a time to render the whole set, which is a waste of your time and disk space – a big font can take up over 1Mb. If you know that you aren't going to use the numbers or any of the international characters or only want one

case, then you can deselect the others and make it all quicker. Because of the nature and use of these fonts, you will probably have a hard drive, so space might not be a consideration but even so a full character set, with lots of effects, took about five minutes to render on a 030. Simpler ones rendered a lot faster – only seconds in some cases.

Speaking of speed, Class X have also optimised the redraw of fonts in the interface, so you can make adjustments and see the preview a lot faster. They claim it is actually about five times faster.

There is no doubt that Font Machine is a brilliant program. It's ideal for video titlers and a must for users of the X-DVE package. It uses large fonts because of the nature of the program (adding a texture to an 8-point would be a waste of time) and even if you don't have any large fonts, you needn't worry because it comes with over 20. However, it's a niche program strictly for graphics people and video buffs. Over in Italy the Amiga is very popular for video titling on a professional level, whereas its following here in England is much more amateur to semi-professional.

You'll be glad to hear that Font Machine 1 should be appearing on the AF Coverdisk soon, with details of how you can get hold of the new version at a special rate. It's certainly worth plumping for 2, there's much more on offer. ■

New features

- Emboss operator
- Palette Optimiser; fast and useful
- Full ARexx interface
- User interface is better and more suited for interlaced screens
- Automatic attributes remap on palette changes
- Random Mapping mode
- Palette customisation; build your own colour spreads
- Ready-to-use pattern presets
- Automatic ColorFonts remap
- ColorFonts' palette optimisation
- Ability to save a subset of the font
- Close gadgets on font and texture windows
- Enhancements in the GUI code
- Automatic font redraw now works with AmigaOS2.xx
- Speed: font redraw is about 5 times faster than v1.xx
- Antialiasing: faster and more accurate

Font Machine 2

Price: £46.99

Supplier: Future Publishing

Contact: 01225 822511 (AMFFONT2)

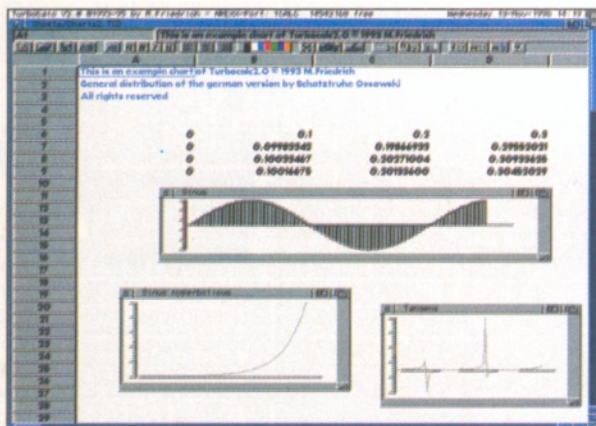
Verdict: 90%

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CDcheck^{out}

Ben Vost introduces three new discs for you this month...



You'll find a full version of TurboCalc 2.1 on Aminet 14 – complete with an AmigaGuide document with pictures!

Aminet 14

You ALL know what an Aminet CD consists of, so the main point of these Aminet reviews has become whether to slag off or praise the freebie content on the disc.

The latest Aminet CD – we're now up to version 14 – contains a full version of TurboCalc 2.1 with an online manual with pictures (unusual for an AmigaGuide document). You lucky punters also get a demo version of the current release of TurboCalc – 3.5.

Apart from that, this CD concentrates on a selection of business software, although the size of the biz directory is dwarfed, as usual, by the mods and pix directories. There's also a replacement for AmigaGuide on the disc called PowerGuide which seems to offer a few more options including a search facility other than the standard Multiview.

"As usual, an invaluable resource."

Aminet 14

Price: £12.99

Supplier: Epic

Contact: 0500 131 486 OK

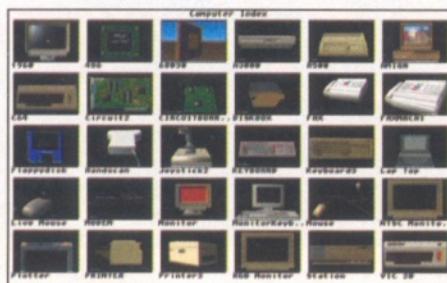
Verdict: 90%



Light-ROM Gold

The Light-ROM series has always been the best way to get your hands on hundreds of 3D objects, scenes and animations. But that doesn't alter the fact that the CDs aren't very well organised. Light-ROM Gold is no exception. Combining the best Lightwave models from the first three Light-ROMs, you should only buy this volume if you either haven't previously bought a Light-ROM, or you just want all the Lightwave models on the previous CDs gathered in one place.

The disc is jam-packed (649Mb), with a few repeats, but my real gripe is that there has been no effort made to make the files on the CD more accessible to the Amiga user. Graphic Detail, the producers of the CD, could have



A great collection if you can actually find exactly what you are looking for.

ensured that "Show all files" and "View by name" were switched on. They could also have used proper instead of 8.3 filenames.

Unfortunately, although models are grouped roughly, without searching through the index files, there is little chance of finding the model you want which makes this CD even more frustrating.

All the same, as I said earlier, this is the only player in the game, so if you want a comprehensive collection of Lightwave models, scenes and textures then this is the CD that you have to get.

Light-ROM Gold

Price: £19.95

Supplier: Weird Science

Contact: 0116 234 1682

Verdict: 75%



Weird Science have joined the ever-growing trend of producing CD's to help you onto the net.

In-To-The-Net/Out-Of-The-Net

There is a swell of new CDs on the market at the moment devoted to getting Amiga users on the Internet and Weird Science's contribution is designed to get even floppy-only owners surfing in no time. For a CD designed for use on both Amigas and Windows 95 machines, Weird Science really illustrate the way it ought to be done. Other than by searching through the individual files, there is no way that the average Amiga johnny is going to know that this is a multi-platform release (take note Graphic Detail!).

You get two CDs, one devoted to getting you onto the net with plenty of software, and the second filled with web sites for some offline browsing so that you can get to grips with the Web without having to pay for the phone call costs.

Weird Science have also collated information from a variety of sources allowing you to find out more about the Internet in general and creating web pages of your own in particular in AmigaGuide and HTML formats. So far, we haven't seen the offerings from Epic (Get On the Net), Active (NetConnect) or any others, but we can say that for £19.95 you're getting a whole lot of Internet. ■

In-To-The-Net/Out-Of-The Net

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Supplier: Weird Science

Contact: 0116 234 1682

Verdict: 85%

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Amiga answers

Amiga Midi

I've had a ST for many years and am quite happy with the use of sequencers, Midi, and so on. Recently I've been able to pick up a second hand 1Mb Amiga A500 for my kids but though I know that the Amiga can be used for Midi sequencing I've noticed that there are no Midi connectors. Have I got an old model and, if not, what exactly do I need to do in order to use Midi? Also what sequencing software is available at the moment. Is there any serious

software, similar to Cubase, around? I've read a little about packages called Bars & Pipes and KCS in an old magazine advert but when I telephoned the supplier I was told that these products were no longer available.

Mr P. J. Boyd
Corton
Norfolk

Unlike the Atari ST the Amiga does not have separate Midi connectors on board but the

serial port can handle data transmission at Midi speeds and this is what's used. In order to use Midi you will however need to get yourself a piece of hardware called a 'Midi Interface' to provide the opto-isolation and the right type of (DIN) connectors. These are simple devices which plug straight into the Amiga's serial port and the good news is that they are cheap – HiSoft's Pro Midi Interface for example, which I use myself, costs just £24.95 (HiSoft can be reached on tel: 01525 718181).

The experts at hand to help you...



Whenever you try out something different with your Amiga, or buy a new piece of kit, you might come across problems that you don't know how to solve. That's what these pages are here for – to guide you through your difficulties and get you using and enjoying your machine to the full. We've got a great group of experts to hand with their own in-depth knowledge in special Amiga areas. So put them to the test, and send your queries in.



Paul Overaa is our Operating Systems programming expert. He has written several books, including: *Mastering Amiga Assembler*, *Mastering Amiga ARexx* and *Mastering Amiga C*. When he's not

drinking red wine or wind surfing, Paul can be found making music and designing programs on his Amiga.



John Kennedy is our hardware and music expert. He has written *Supertests* and features alike for *Amiga Shopper* in the past. He also writes features and tutorials on a range of subjects for our sister magazine *Amiga Format*. This month in *Amiga Shopper* John continues with his tutorial on *CanDo*.



Gary Whiteley is our expert on video and graphics. He regularly produces work for films and TV. Gary has also written several books on his favourite subjects – among them is *Amiga Desktop Video*, published by Future Publishing (call ☎ 01225 822511 to order a copy). Gary also regularly reviews new products for *Amiga Shopper*.



Larry Hickmott is our DTP and word processing expert. He produces his own DTP magazine called *Em* and has written several books, including *The Wordworth Companion for Digita*. This month he reviews the latest printers on the market in our extensive feature.

Answers contents

If you're looking for a particular problem, this handy index will help you find the answers you need:

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As far as sequencers go it's rather bad news. Although the Amiga could have made inroads into the serious Midi/music markets fairly easily – it didn't. I won't pull any punches here... the fact that it didn't was due primarily to a lack of the appropriate software. In short the ST and the Amiga are worlds apart music-wise and you're not going to find anywhere near the sort of quality sequencing software that you have available on the ST. Also this is almost certainly not going to change so you can forget about Cubase type sequencers and C-Labs type notation software ever appearing.

The Bars & Pipes sequencer has been discontinued and it wouldn't have been any use on your 1Mb machine anyway (you need at least 2Mb to do anything at all). Dr T's KCS, the sequencer which I personally favour and use, is also (in theory) still available although I've not been able to find anyone who stocks it. Unfortunately this too requires 2Mb of memory so you wouldn't be able to use it unless you added some more RAM. If by chance, however, you came across anyone willing to sell you an old copy of version 1.6 of KCS then this would run on your machine without needing extra memory!

The bottom line is that you really only have two choices: Software Technology's (tel: 0161 236 2515) Sequencer One Plus, which is an easy-to-use cheap (£49.95) entry level package and Music X (version 2). Both of these will be usable on a 1Mb machine.

Paul

Meta Tags

I've recently started learning about Web page creation and have come across a couple of references to 'Meta tags'. Unfortunately no explanation was given as to what these actually are. Are they Netscape extensions?

Julian Ward
Marblethorpe
Lincolnshire

No they're not Netscape related at all. Meta tags are used to provide extra information, so called 'meta information', for a Web server. There are various options but the 'name' and 'content' fields are probably the most commonly seen since they are used for providing keywords for cataloguing purposes. If, for example, I had written this reply as an HTML document then I might have included these two meta tags in the document header...

```
<meta name="Author" content="Paul Overaa">
```

```
<meta name="subject" content="answers to questions">
```

These would assign my name as the content of a keyword called 'Author', and identify the subject material as 'answers to questions'. This information could not only be used by the site server for identification purposes but search robots from other sites, ie programs that automatically roam the Web looking for material of interest, could extract and use the contents of such tags.

Paul

Peter Jackson
Orsett
Essex

Date Conversion

Is there a routine available that can convert the time stamp details held in a disk file into a readable, ie ASCII string, version? I've looked at the Bantam Book's AmigaDOS manual from cover to cover and can find nothing of use.

John Clarke
Weymouth
Dorset

There is a function called DateToStr() that'll do the job but it's only been available since O/S release 2.04 and so only appeared in the 3rd editions of the RKM and AmigaDOS manuals. The basic usage template is this...

```
success=DateToStr(datetime)
d0 d1
```

where register d1 points to an initialised DateTime structure. To set this up the dat_Stamp field should hold the date stamp you wish to convert and dat_Format the format indicator (FORMAT_DOS, the value I've used in the example, produces a dd-mmm-yy type date). The dat_Flag field has to be set to either DTF_SUBST which causes Today, Monday, Tuesday etc., to be used rather than the designated format string or to Null.

The other three fields in the structure (dat_StrDay, dat_StrDate and dat_StrTime) need to point to buffers which will receive the day, date and time strings respectively. The example fragment, where a date only is being converted, should give you the general idea!

Paul

File Transfer from an Obsolete Machine

The firm I work for has recently had a clear out and, amongst other things, I've been given an old computer with two 5.25" disk drives that I'm told uses an operating system called CP/M. Somebody mentioned that a lot of the disks used with this machine contain archive material (apparently stored as ordinary text files) which would be of use to our company and, prior to me being given them, we did in fact ask a local computer company for their help. Unfortunately an estimate, of almost £800 (around ten pounds per disk) for transferring the material onto 3 1/2" PC disks meant that such a conversion operation was out of the question.

Now that the machine is at home of course I've only got that, and my Amiga, to experiment with but a colleague of mine is certain that there must be a way of either linking a 5 1/4" drive to the Amiga or linking the machines via their parallel or serial ports.

Unfortunately, whilst this chap is pretty clued up on computers in general, he doesn't know anything about the Amiga. Does this conversion route sound feasible and, if so, would anyone at Amiga Shopper know how it is done? We do incidentally have access to both HiSoft and Blitz Basic for the Amiga but no languages at all for the CP/M machine.

Chances are that the easiest solution is going to be linking the two machines via their serial ports and, if you stick to a low transfer speed (namely 300 baud), it should be possible to move files over to your Amiga using what is known as a 'three wire' connection.

Unfortunately older machines are notorious for having 'non standard' port connections and so it's going to be necessary for you (or one of your colleagues) to hunt through any machine manuals you have for some serial port information. You'll need details of the serial port's system-ground, transmit-data and receive-data pins in order to make up suitable serial lead. I can tell you however that it is pins 7, 2, and 3 that you'll need on the Amiga side!

Now there are no dangerous currents involved but wrong connection can easily damage the I/O chips so if you are in any doubt at all you MUST get help from someone who is used to playing around with electronics.

Assuming however that you do get a suitable lead prepared, and have someone around who is happy experimenting with such serial port transfer, you'll be able to transfer files from the CP/M end using a utility called PIP (which you'll find on your CP/M system disks).

Reading serial data into the Amiga is quite easy. The following HiSoft Basic program, for example, will read data from the serial device and place it in the ram disk as a file called 'myfile'...

Listing 1

TEXT date[12]; struct DateTime

```
dt;dt.dat_Stamp=date_stamp;
dt.dat_Format=FORMAT_DOS;
dt.dat_Flags=NULL;
dt.dat_StrDay=NULL;
dt.dat_StrDate=date;
dt.dat_StrTime=NULL;
```

DateToStr(&dt); printf("%s\n", date);

● Listing 1: Code fragment showing a typical use of the DOS library's DateToStr() function (see 'Date Function' letter).


```

OPEN "RAM:myfile" FOR OUTPUT AS #1
OPEN "COM1:300,n,8,1" AS #2
X$="D" 'just a dummy value to get into
loop
  WHILE (ASC(X$)<>94) [ example 'end of
  file' terminator ]
    X$=INPUT$(1,#2):PRINTX$;PRINT # 1,X$;
  WEND
CLOSE 1: CLOSE 2

```

This sort of scheme could be used to collect serial data from most older machines and the only thing you need to be careful about is the end-of-file terminator, ie the character which signifies the end of the file, because this varies from system to system although on CP/M machines it is always control-Z. To transfer a file in this fashion you'd link the two machines with the serial lead, load up HiSoft Basic and run the above program! Nothing visible will happen because the program just sits there waiting to collect serial data which, when the program first starts, is not being sent.

The next step is to move across to your CP/M machine. In terms of detailed help there's a minor snag here since I no longer have any CP/M documentation available. Being a CP/M machine however it will have devices like LST implemented and you'll need to check that this device is logically tied to the machine's serial port (which, incidentally, must also be set to 300 baud). STAT is the CP/M system program that will let you carry out these type of assignments and this should be documented in the CP/M sections of your old computer's manual). Once the output device has been chosen you'll need to load up the PIP utility and issue a suitable PIP command. Again it's the CP/M manual sections that will contain the detailed options but the basic scenario will look like this...

First you'll run PIP and be greeted with an asterisk prompt...

```
A>PIP
```

then you'll type something like...

```
LST:=B:example
```

which would copy the drive B: file 'example' to CP/M's LST device (which in turn will be redirecting the data to the old machine's serial port). It's at this time that you should see visible evidence of file transfer appear on the Amiga's screen! Before all this you can incidentally check the serial link by hitting control-P (CP/M's echo to printer command). From that point on, everything you type at the old machine's keyboard should appear on the Amiga screen. With the simple lead I've suggested if the serial ports are properly configured, but you don't seem to be reading anything, then about the only thing that could be wrong would be that the lead connections on pins 2 and 3 (the data transmit/receive lines) were the wrong way round. The solution here would be to swap the two wires around at one end of the lead and try again.

You often get a few snags but with this type of 'comms hack' magic but a bit of experimentation usually saves the day. CP/M should for instance, provide an end-of-file marker but if things appear to 'hang' at the end

of the transfer the keyboard sequence control-P... control-Z... control-P (which will echo a CP/M end-of-file character to the Amiga) may well encourage the HiSoft Basic program to give its OK prompt. If all else fails stop the Basic program and type CLOSE to finish the Amiga side of the transfer. If you do this all your file contents at the Amiga end will then be safe!

Paul

Floppy failure

I can load from my A1200's floppy disk drive, however when I set the write enable tab and try to write to the disk from the hard drive, a system request comes up saying "Empty has a write error on disk block 880". Then the disk becomes df0: NDOS.

T Makepeace
Gosforth

Does this happen to all the floppy disks you use, or only one particularly disk? If it's only the one disk, chuck it away. It's knackered. Copy all you can off it and then bin it so you aren't tempted to try again. Floppy disks are cheap enough to avoid the risk of losing data on them.

If this happens to all the floppy disks you try, then either your floppy disk drive is broken or the head is out of alignment and needs adjusting by a repair shop or replaced. It's also possible that a virus could be a work, so perform the usual tests.

John

Object Apology

I have a CD-ROM called "LightRom" which contains lots of models and objects, including some in Imagine format. However, when I load them into Imagine and try to render them I get error messages about points using multiple faces or something, and even though I keep hitting OK the errors won't go away. It's odd, because the objects load fine and are displayed in the editor. It's only when I try to render them the errors start. Any ideas?

Brian Clayton
Manchester

The objects must have been saved in an early version of Imagine or by some program which claims to be Imagine compatible. I've come across the same problem myself, and there isn't a lot you can do. Imagine has a "Check Object" menu option, but this will only confirm that the object is safe.

Sometimes if you select MERGE this will solve the problem, although this drastically reduces the control you have over the individual facets. If possible, try and locate a program called "Pixel 3D" or "OBI Junior". These two pages were able to load objects in a wide range of formats, allow some editing, and then re-save them. In the process they can fix any errors in the object.

I've had success with Pixel 3D and Imagine objects using this technique. Finding these packages might be difficult, but I don't think there is anything on Aminet which will do the same job.

John

Copper List Poking

I've picked up an old A500 machine and am now trying to come to terms with C and assembly language programming on the Amiga (it's OK I'm not nuts - I've done plenty of coding on other machines). Trouble is I've come across some old PD disks that deal with scrolling using 'copper list poking' from assembler. I'd like to try a similar thing using C (if it's possible) but the difficulty is that I don't know enough about Amiga 680x0 coding to fully appreciate the explanations. I understand the scroll operations themselves but I'm having trouble locating the bitplane pointers used by the screen. I've enclosed the listing from the disk and, providing it makes sense, I'd be very grateful if someone could explain how I identify the bitplanes being used.

Peter Scobie
Dartford
Kent

The code you provided looks pretty awful at first, but it's fairly well commented so it has not been too difficult to fathom out what's going on. The program starts by opening an oversized (in fact double sized) custom screen and getting the address of the View structure which contains pointers to the system copper lists, ie the instruction lists used by the Amiga's display hardware. It then uses a short loop to locate the bitplane pointers that get jammed into the hardware registers. As the program runs it continually replaces these original pointers with increasingly modified values causing the displayed screen area to change each time the copper lists are re-read (which is during every vertical blanking interval).

This type of scrolling can certainly be done from C although the results will probably not be as smooth as with an assembly language routine. The initial part of the trick, and the area that you are having trouble with, involves finding out which the copper instructions to change. Luckily, because of the way the lists are created, all the bitplane pointer instructions are next to each other and in short you need to look for a series instructions the first of which takes this form...

move register	data-value
00e0	some 16 bit data value
^	^
instruction	first of the values
to be found	to be 'modified'

These copper instructions consist of two 16 bit words, and the type of loop needed to skip through the list (given an appropriate View pointer) and locate that first 0x00e0 instruction is this...

```

view_p=(struct View *)ViewAddress();
copperlist_p=g_view_p->LOFCprList->start;
while((*copperlist_p)!=0x00e0)
{copperlist_p+=2;}
copperlist_p++; /* move to second word of
the instruction */

```

Presumably you are already aware that each 32 bit bitplane address is split into two halves (a three bitplane screen for example has six plane pointer instructions) so, having got

that starting point, bitplane adjustment is just a matter of skipping through list making address increment or decrement changes. If, incidentally, you are going to do much coding at this level I would recommend you get hold of the Addison Wesley Amiga Hardware Reference Manual. It's rather out-of-date as far as the latest Amigas go but it'll be idea for A500 hardware programming!

Paul

Sysex Programming

I've got a Midi sound module which the manual says can be sysex controlled using the hexadecimal programming language. Unfortunately no description of the language statements are given. Can you help?

Mr George Lopaz
Greenwich
London

Hexadecimal isn't a programming language, it's a base 16 numbering system which involves use of the numbers 0-9 plus the letters A-F. Trying to briefly explain what all this 'different base' stuff means is not easy but, in a sense, you probably use different number bases without realising it. And if you still weigh things in pounds and ounces you are actually using something that comes very close to 'hexadecimal numbering' anyway - it's only the notation that's different.

With our normal 'base 10' numbering system, we group by units of ten. When you add numbers together you add the units first, then remove multiples of ten and 'carry' these over to a 'tens' column. You do a similar operation with the 'tens' column and so on. The only reason that 10 is used for our numbering system is that we found it convenient - we are, after all, born with ten fingers to count with!

So, when you add pounds and ounces you proceed as follows: You add the ounces and if they come to more than 16 you 'carry' the multiples of 16 into the 'pounds' column...

2 lbs 14 ounces
2 lbs 4 ounces

5 lbs 2 ounces

(14 + 4 = 18: One group of 16 to carry and 2 ounces left over)

If instead of using numbers from 0 to 15 for our ounces column then we used 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E and F - then we could write 2 pounds 14 ounces as 2E ounces. It's exactly this type of extended numbering system that forms the basis of the hexadecimal notation.

To be honest it's not just hexadecimal numbers that you are going to need to learn about. Many Midi manuals also use binary (base 2) numbers to describe what the various parts of a particular hex value means on their equipment and in reality the hex representation is just a convenient way of representing the underlying binary values anyway.

The best idea is to get down to your local library and look at a few introductory books that deal with general computer programming. Not all will deal with these number-related issues but you'll doubtless find a few that will explain

things in detail. Don't worry incidentally if it seems a little difficult at first - everyone finds these sort of number conversions awkward initially but rest assured, with a little practice it does become easy. Once you have some hex/binary practice under your belt chances are your Midi manuals will then start to make more sense anyway.

Paul

Storm C++ Coding

With the release of Storm C I decided to start reading a book on C++ to see what's involved (Developing C++ Software by Russel Winder). Unfortunately I'm getting lost at the first hurdle with talk about ADT versus true object-oriented coding. What's the difference and can Storm C++ be used either way?

Tony Bickerstaff
Essex

An Abstract Data Type (ADT) is basically an interface, ie a set of functions, that provide a standardised link to the operations you are trying to perform. If, for example, you were creating an ADT interface for a text file reader you would firstly identify the things that you might wish to do - open a file, close a file, read the first line of text, read next line and so on. Having done that you'd implement a set of functions `OpenTextFile()`, `CloseTextFile()`, `ReadFirstLine()`, `ReadNextLine()` etc., and these routines would become the interface functions of your text reader ADT.

Both C and C++ can be used in this sort of way to create ADT style interfaces but C++ enables things to be taken quite a lot further because you can hide these functions from general view. As you'll probably already know C++ allows classes to be created that can have member functions associated with them so you could, for example, implement a 'textfile' class that incorporated those ADT routines mentioned earlier.

In this sense instances of your textfile class then become 'objects' that have certain properties and methods of their own and this is really the basis of the object-oriented form of C++ coding. You can similarly define classes for windows, gadgets and anything else that your program requires.

I've not seen the book you mention but all it's doing is describing two different styles of C++ coding and Storm C could of course be used with either style.

Paul

Amiga Basic

My question couldn't be shorter - does anyone know where I can buy a copy of an Amiga Basic manual?

R. Sandy
Dyce (nr Aberdeen)
Scotland

Listing 2

```
/* F1 function key script definition */
CLEAR='0C'x
directory='MYDIR'
window='con:0/400/640/100/F1/ close'
file$='ram:T/F1'
address command
call Open(f,file$;w')
call WriteIn(f;echo noline' CLEAR)
call WriteIn(f;cd' directory$)
call WriteIn(f;prompt 1;>)
call Close(f)
run newshell window file$
delete file$
exit
```

The script for a Shell window function key - see Shell Windows At The Touch Of A Key!

This isn't the first time that we've been asked about this lately but sorry you're out of luck - the manual has not been available for many years and can't be bought for love nor money. The only thing I can suggest is that you place an advert in one of the mags that specialise in the sale of second-hand computers etc. You might just get lucky!

Paul

Port Control

I want to learn about the control of external equipment using the Amiga's parallel port and someone told me that there used to be special Amiga kits available. Do you know of any likely sources?

Albert Pitt
via email

I vaguely remember that a company called SwitchSoft made just such a kit a few years ago. Unfortunately, they don't seem to be advertising anywhere of late so I've not been able to come up with a telephone number for you.

Paul

By the way SwitchSoft - if you're still out there in Amiga land - drop us a line with some current details and we'll pass them on!

Shell Windows At The Touch Of A Key

How can I create a function key definition that will open a shell window with a named directory as the current directory. I've tried several possibilities but none have worked!

Jennifer Rojiani
St Helier
Jersey

To be honest it is a little more awkward than most people would expect but the ARexx script shown in the accompanying listing will do the job when tied to a function key. Just change the MYDIR reference to the appropriate device/filepath name of the directory you wish to use.

Paul ■

Choice Domain

Steve Liddle looks at his final collection of programs from the Public Domain including a new children's art package and a utility that allows you to turn Workbench into a Windows95 look'alike!

PDChoice

Blue Rose Graphics



How b-o-r-i-n-g I thought, when confronted with three PD disks containing fonts, music and graphics.

Disk one boots up and gives you a preview of what is on the other disks but this is where my boredom turned to interest and then admiration. As you can see from the screenshots the clipart is all in colour and very professional. It's been drawn by Mr. Blue Rose himself, Eddie Barry, and he's done a great job.



Some excellent colour clipart can be found on The Blue Rose Graphics set.

I just wish there was more clipart on these disks instead of the music mods and cut and paste fonts. There is a mixture because the contents are aimed mainly at Video work but all the material comes in standard formats so it can be used in any way you see fit. Really excellent if you need it.

The three disks can be picked up for just £4, including postage, direct from Eddie at: 14 Tudor Brea, Donaghcloney, Craigavon, Co. Armagh BT66 7LF

Verdict: 90%

Star buy

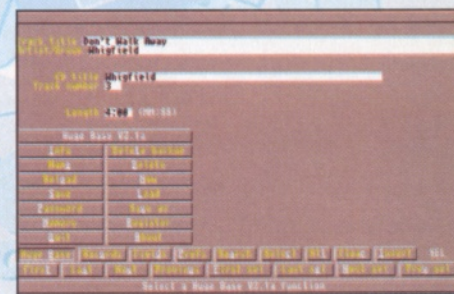


There are cut and paste fonts as well as proper colour fonts that you can use in Dpaint etc.

HugeBase V2.1a

This database program used to be Shareware but now it's Freeware which means you get the full version for the price of a PD disk. Usually when this happens it means the author has given up on the program but not so in this case. The author is still actively supporting the program and promises a new version by Christmas 96.

On the face of it, HugeBase is yet another Amos written ugly monster but it is very powerful and appears to be bug free, which is a nice change. There's a huge well written and informative manual on disk which is always a good start, and Hugebase has stacks of features. I couldn't find any important feature that it didn't support, apart from the limit to



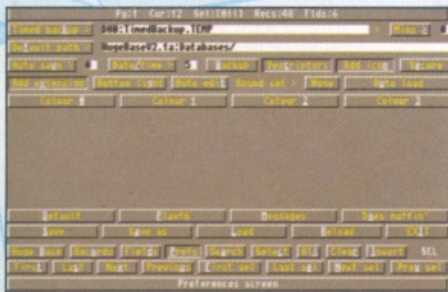
This is just a small fraction of the options that are available in HugeBase.

Who, what, where, when, why, how...

Product	No. of disks	Type of product	Price	Supplier	Contact	Verdict	Page
Art Effex	1	Childrens Art	£3.99	Arrow-Dynamic	01304-832344	80%	39
Blue Rose	3	Fonts/clipart	£4.00	Eddie Barry	See review	90%	37
HugeBase	1	Database	£1.25	Snappy PD	01375-850365	86%	37
SFMV	1	Anim converter	1.25	Snappy PD	01375-850365	78%	38
AbkViewer	166K	Amos file viewer	N/A	Aminet/dev/amos/abk_view.lha		80%	38
StartMenu V2	308K	Win95 Taskbar	N/A	Aminet/util/wb/startmenu2.lha		91%	38
MacWb	79K	Mac hack	N/A	Aminet/util/boot/macwb.lha		78%	38
Allocator	22K	Memory manager	N/A	Aminet/util/misc/allocator.lha		88%	39
BirthdayWarner	17K	Birthday reminder	N/A	Aminet/util/time/birthdaywarner.lha		75%	39
CleanUp	6K	Disk cleaner	N/A	Aminet/disk/misc/cleanupV1_0.lha		78%	39

records which is 60,000. Although this should be fine for most users it is surprising that the maximum amount of records is not determined by the amount of free RAM you have available, which seems to be usual nowadays. Apart from that and the awful looking records screen this is a fully featured database that deserves more than a cursory glance.

Verdict: 86%



HugeBase offers enough prefs to keep everyone happy.

SFMV

SFMV stands for 'Shoah Full Motion Video' and this disk of utilities converts standard IFF anims into the new format and then plays them. SFMV is designed to play back full screen animations, using larger than normal pixels to create the full screen effect for you. The animations run slowly on a standard A1200 and so an O30 or at least an O20 with fast RAM is required to run the anims at an acceptable rate. In fact, SFMV requires an AGA Amiga to run.

The program is still in its early stages and the authors plan to implement better compression methods, increase the number of colours (currently only 16) and the screen size. As it stands SFMV is OK but there isn't that much to get excited about – yet.

Verdict: 78%

AminetChoice

AbkViewer

This is a very simple program that will display Amosfiles, without the need to own Amos itself. So if you come across some 'abk' files just load



This is what we call in the trade, a very basic menu.

this up and use the file selector to view either abk pictures, bobs, sprites or icons. When viewing a bank file, such as a bob bank, you are asked to enter the bob number. This is because

When viewing bob & icon banks there's no indication of how many images there are. You can't go back and forth – one look and you have to reload the bank.



there are usually many images in a bank. You then get a small button selector to whiz through all the images that are stored in the bank. The interface is basic and unappealing, but it serves its purpose. Also included in the archive are a selection of example abk pictures, bobs, icons and sprites.

Verdict: 80%

TCPdI

TCPdI is a cli only program that allows you to download web pages, graphics and archives from the Internet. It has options that can turn it into a Web robot or you can use it to get a regular update of a specific page, program or even a whole web site. The command line offers quite a few options including wildcard support. TCPdI (Tcp download) requires a modem, Internet connection and AmiTCP to operate. I tried out this program on my 6Mb A1200 over a weekend and in that time it crashed at least 15 times, quite often causing read/write errors on my hard drive. I contacted the author to see if he knew what the problem was and he told me that the source code was included with the archive and it was up to me to sort it out.

When it did work it was great. Files were downloaded really fast and I was most impressed. There is a 'depth' option which allows you to tell TCPdI how deep you want it to dig from your starting point, but I had problems grabbing the entire contents of one complete site, which was my main aim. I dreamed about downloading my favourite sites to my hard drive and grabbing any updated documents/files automatically once a week, saving me a fortune in online time. But alas I gave up after all the crashing. I really hope someone who knows what they are doing picks up the source code and develops this program as it has excellent potential, but in its current unstable state (as far as my Amiga is concerned) it is near useless.

Verdict: 29%

StartMenu V2.0

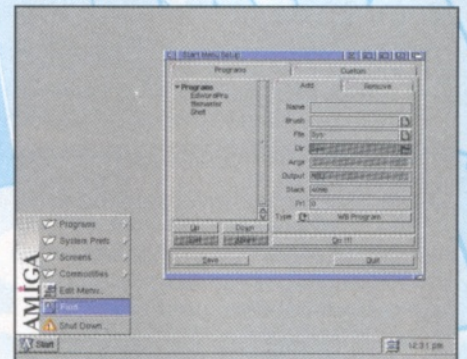


I am sure most of you by now have seen the 'start menu' on Windows 95? For those of you that haven't take a look at the screen shot.

StartMenu V2.0 attempts to emulate the Win95 taskbar on your Amiga and it does a good job of it too. Virtually every feature of the menus are configurable, even down to changing the picture on the side of the bar.

StartMenu goes in your WBStartup drawer and runs when you boot up your Workbench.

The menu sits quietly at the bottom of your Amiga screen waiting for you to click on the 'start' button. (You can even change the text on this button if you want.) If we forget about Windows 95 and look at this program on its own merits it's a jolly good menu system. To add programs to the menus and sub-menus you just click on 'start' then on 'edit menu' and an MUI configuration requester pops up. Using this you tack in your favourite programs using a file selector, shuffle them in the order you want them and then click on save. All your favourites are now just two mouse clicks away. At the other end of the task bar is a digital clock, click



Start menu has a lot of good features hidden under the bonnett. One of them is its MUI preferences requester.

on this for the date as well. There are in fact three versions available in this archive. I have just described the full version but there is also a 'lite' and 'very lite' version. They have fewer features with no horizontal bar and clock, which some people may prefer. To round it all off there is a very easy to use installer script and good AmigaGuide documentation. Nice one.

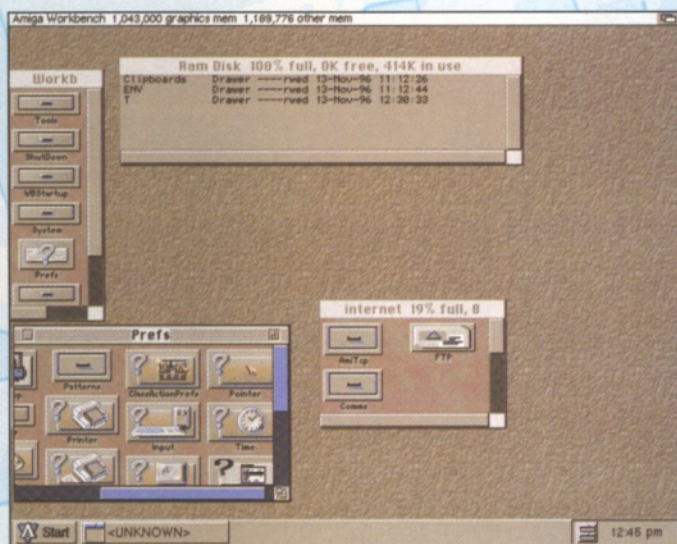
Verdict: 91%

Star buy

MacWb

This hack was born of a previous program called 'Workbench 95' that was a not too serious attempt at giving Workbench a Windows 95 look. The author admits that WB 95 was not that stable, and he has bounced back with MacWB.

MacWB is a not too serious attempt at giving Workbench a slight System 7 look. It is extremely easy to get the hack in place – all you need to do is copy the supplied font to your Fonts drawer and the main executable to your 'C' drawer. You can then run Macwb from the shell or create an entry for it in your user-startup or even place the executable in your Wbstartup drawer. MacWB doesn't do much, except to change the appearance of your windows and requesters to what looks to me like an Atari ST. I think Amiga developers (and users) are developing an inferiority complex. Workbench might be out of touch but it can look as good as you want it to if you have enough memory and speed. All these hacks and partial emulators just help to convince Amiga users they are missing out on something. I just hope that once the majority of Amiga users do eventually end up with Mac's and PC's that the ex-Amiga coders write some little hacks for Windows 95 and



System 7 that emulate the best parts of Workbench 3. There is an archive on Aminet in util/wb called 'macpointers' if you want a Mac style mouse pointer to go with MacWb.

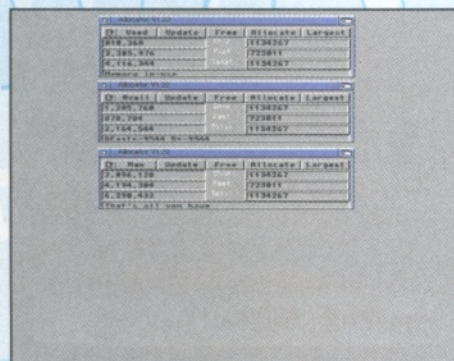
Verdict: 78%

Allocator

This is a small but possibly useful memory manager. On running it from Workbench (requires OS3) a small window opens and displays the currently available chip and fast memory that is free. Bear in mind that Allocator takes up around 63k of memory.

A cycle gadget allows you to toggle to 'used', 'max' or the default 'avail'. 'used' tells you how much memory is currently being used on your system and 'max' tells you the maximum memory you have available before booting. Clicking on 'update' updates Allocator's data - useful if you run Allocator and then another program.

'Free' will attempt to flush memory of unused programs and libraries which can be useful and maybe even save you the odd reboot after running dodgy programs that do not free memory on exit. 'Allocate' is the most interesting feature (hence the title). This will be of great use to programmers because it allows you to allocate any amount of memory from the available pool. If you are not sure whether a new program will run in 1Mb of chip mem, then just allocate 1Mb of chip RAM and try to run the program. The final feature of Allocator is 'largest'



Allocator in various states of undress.

A mix of Mac windows and the Win 95 Start menu. Er, can I have my old Workbench 3 back please?

which tells you the largest slice of currently free memory available to programs.

Verdict: 88%

BirthdayWarner

A very simple cli only utility that reads a script file containing the birthdays of those people most important to you. I think the idea is to put this in your 'user-startup' script so that whenever you boot up you will be reminded in a countdown style that Uncle Fred's birthday is only five days away.

Your script file, containing all the names and birth dates, must be set out in a strict format. This is quite straightforward and readily explained in the documentation. Strangely though you are not allowed spaces in your script file, in other words you won't get the

above example message because 'Uncle Fred' has a space but this is just a small nag. The source code is included and Birthday Warner is Freeware.

Verdict: 75%

CleanUp

It's keep it simple month, in case you hadn't already noticed, and CleanUp is Mr Simple himself. This tiny fellow's job in life is to remove empty files and drawers from your hard drive.

It's a Shell only program and all it requires is the name of the drive to work on. You also have the optional luxuries of telling CleanUp to ignore empty drawers, report back on what it is doing to your drive and whether or not to ignore files or drawers with the protected flag set.

For DOpus users who do not know how to set up a button for a shell command full instructions are given. CleanUp works! What more can I say?

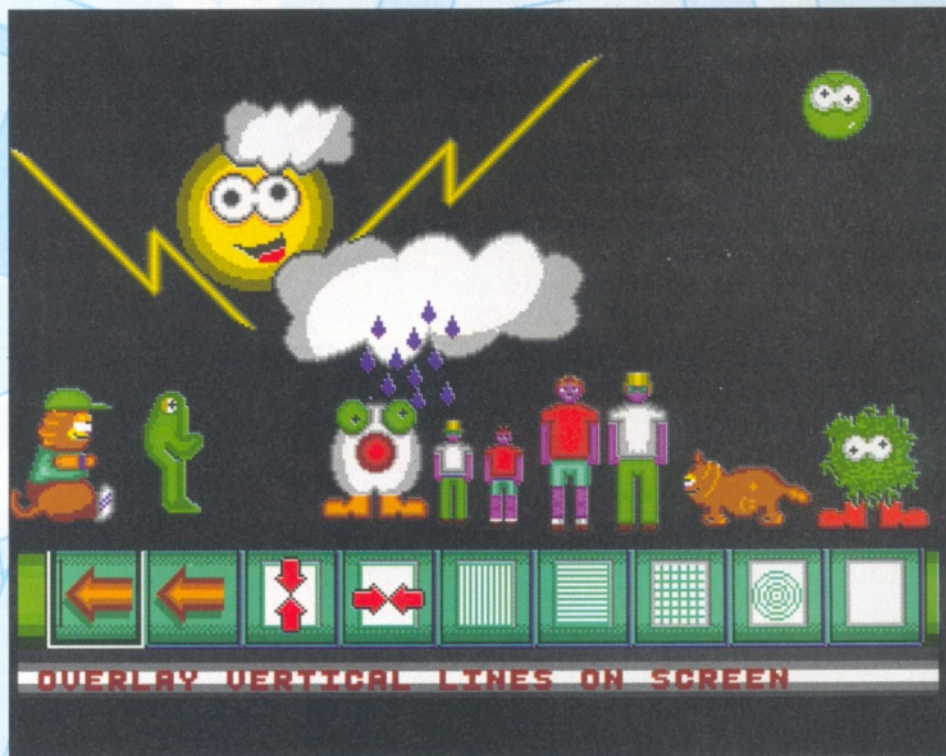
Verdict: 78%

LicencewareChoice

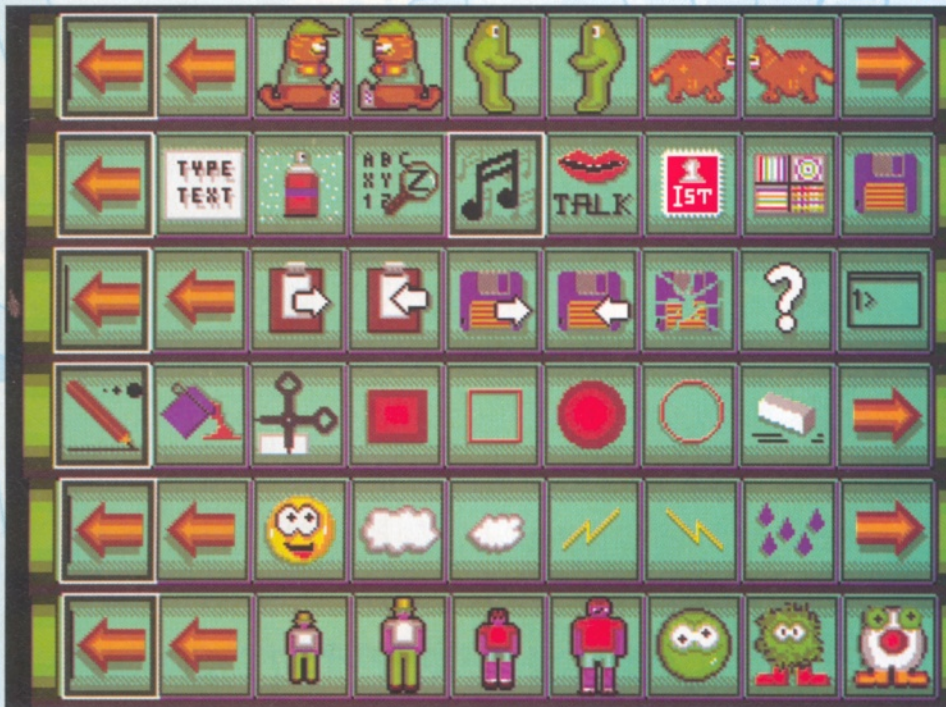
Art Effex

This is the first program from a new Licenceware scheme run by Arrow PD. The scheme is called Arrow-Dynamic and Art Effex is a childrens art program. It includes all the usual features you would expect in such a package including: pen sizes, fill, cut and paste, circle, square, eraser, line, spray can, zoom, screen fx and a few clipart stamps.

That's all you get but I think the aim of the package is to keep things simple, which I am



This picture contains all the built in stamps of Art Effex.



These option bars display most of the options that are available to users of Art Effex.

sure most parents will welcome. This is one of those programs you can leave a child on their own to play with. I am sorry to report though that there are some dubious work-arounds implemented in Art Effex that stick out like a sore thumb. One is the omission of an 'Undo' feature and this will certainly prove very frustrating for the older children. Imagine a child spending an hour drawing a work of art only to make a mistake and not be able to undo it!

The author (Asa Margetts) has included the use of a 'clipboard' which basically means

saving your picture to memory and being able to recall it at any time which sounds like a good compromise, but in practice for this to work like a real undo feature you would have to save your work every time you drew a new piece of your picture. To me this is a serious and huge flaw that should be dealt with.

There are more dodgy non-features too. Take the omission of a printing feature, ouch! OK, this is not the end of the world because Art Effex allows you to save out your picture as a standard IFF picture file which means you can



This colourful yellow plane is one of the seven pre-coloured pictures supplied with Art Effex.



There are also some pictures to colour in too.

load it into a real paint package and then print it. But Art Effex is written in Amos Pro, a program that has some excellent, easy to implement, graphic printing commands so there is little excuse for the omission.

There are also too few clipart stamps in the program. My child got really bored with the 19 on offer and some of the graphics themselves are quite poorly drawn. My final complaint is that there is no installer for hard drive users. There's not even a simple script file that you can double click on. To be fair, the instructions tell you what files are required and where they go, but we are talking educational software here and this sort of thing is unacceptable in my book. Oh yes, I have just come across a minor bug too. The first time you select 'spray can' it won't work until you pick a brush. Now I've got the bad points out of the way we can look at the good side of Art Effex. I hope I haven't put you off yet because this program, despite its flaws, does have something to offer. Its main attraction is its ease of use. Most kids will pick it up and start painting with it right away.

As the child moves the mouse pointer over an icon, text is displayed to alert them what action that button performs. This is very useful, if the child can read, if not you can use the Amiga say option, which is synthesised speech and works quite well. The screen effects draw very quickly, which is unusual for an Amos program and the implementation of cut and paste works extremely well and is simple to use. There is also some pre-drawn clipart supplied that you can load in as well as some pictures in colour.

For the asking price Art Effex (£3.99) represents reasonable value. What prospective purchasers need to decide is whether the flaws mentioned above are important to them or not. For example, the non-ability to print is not important if you do not own a printer or have no wish to print out your pictures. If you can install programs by hand on your hard drive, or do not own a hard drive then the lack of an installer will not bother you. If the clipboard feature instead of undo sounds OK go out and buy Art Effex.

This is not going to be Dynamics' flagship title but it will win its admirers. My four year old had some fun – he loved the sound effects, but was left wanting after an hour or so. ■

Verdict: 80%

White Knight Technology

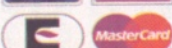
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HTML Tutorial

Part 2

Welcome to the last of a two parter on HTML that goes a bit beyond the basics.

Welcome back to our two-parter tables tutorial for the web. Only last month, I was telling you about the fact that IBrowse was the only Amiga browser to support tables – lo and behold two weeks later, a new demo version of AWeb appears that can not only do tables, but a whole host of other stuff it wasn't very good at before.

You may remember that last month I mentioned you can use nested tables to better achieve the effect you are after with your HTML. This can be quite confusing but I'm sure you are all highly intelligent people, so we'll give it a go anyway. There are two cardinal rules that should be followed when you are nesting tables. The first is to turn the borders on your tables so you can see what's going wrong and the second is to indent each successive level of nesting (this is made easier if you are running on a graphics card-type resolution, but since we turned off word wrapping it won't make any difference on a lower resolution screen, it just means that you'll have to scroll sideways). Turbotext, indeed any text editor worth its salt, can help you here with its auto-indent mode (which can be turned on by hitting CTRL-i).

Let's create an example page to show why nested tables come in handy. The graphic shown gives you a very confused idea of nesting which should become more obvious as you look at the code that makes it work:

I know it isn't easy. One of the choice tags that comes in handy when using nested tables, is the COLSPAN tag, and its sibling the ROWSPAN tag. These two tags allow you to create tables that extend all the way across several cells or rows, usually for stylistic purposes. If you want to include a picture in a table you can come up against problems that can be resolved by using nested tables or the *SPAN tags. Have a look at the "I want nice pictures in my tables" boxout.

Right, back again? OK. We've looked at nested tables, *SPAN and VALIGN tags and now we'll add other tags to your table. Most of the normal text style tags can be used in tables, but not all Amiga browsers support them all. You can use align tags inside table cells, but it's better to use an ALIGN tag inside the <TD> element (<TD ALIGN=RIGHT>, for example).

One tag that is crucial to maintaining the way your page looks on any size screen, or in any browser that supports tables is the WIDTH tag. This can be used for <TD> tags and also for the table itself and my preferred method for

using it is to put a <CENTER> tag at the start of my html and just put everything inside tables with a defined width. As long as you don't make your tables too wide, everyone will be able to see your page roughly as intended, with varying amounts of white space on either side of table depending on how wide the browser window is. A good medium for your tables for this would be about 500 pixels, as used in the tables in the examples. This is narrow enough to ensure that no-one should have to scroll from side to side to see the entire width of the table, and not so narrow that it can't be used creatively.

Finally, some words on image maps. Image maps are something of a bug bear for newcomers to html on the Amiga. The utilities to create them tend to be hidden somewhere on Aminet and then there are the different types: NCSA httpd and server-side or client-side. If you own a copy of ImageF/X, you can go for Sigbjørn Skjæret's MakelImageMap which can create both server- and client-side image maps relatively painlessly although it doesn't yet support ellipses.

Alternatively, the new version of Personal Paint, due out soon, also includes an image map processor that uses the program's normal drawing tools to create the map areas in a very user-friendly fashion.

Nested tables – the source code

```
<html>
<head><title>Tableicious!</title></head>
<body bgcolor="#000000" text="#ffffff">
Hi there! This here is a test of table power!<P>
First we have a simple table. T stands for Table, R for
Row and C for Cell:<P>
<table border=1 width=500>
<tr align=center>
<td align=centre>T1:R1:C1<td align=centre>T1:R1:C2<td
align=centre>T1:R1:C3
</table>
<P>
Now we'll nest that first table inside another with a third
table (if you see what I mean)...
<P>
<table border=1 width=500>
<tr><td>T2:R1:C1
<table border=1 width=300>
<tr>
<td align=center>T1:R1:C1<td
align=center>T1:R1:C2<td align=center>T1:R1:C3
</table>
<td>T2:R1:C2
<table border=1 width=180>
<tr>
<td align=center>T3:R1:C1<td
```

```
align=center>T3:R1:C2
<tr>
<td align=center>T3:R2:C1<td
align=center>T3:R2:C2
</table>
</tr>
</table>
<P>
Now we'll add a fourth table, still with one level of
nesting.
<P>
<table border=1 width=500>
<tr><td>T2:R1:C1
<table border=1 width=300>
<tr>
<td align=center>T1:R1:C1<td
align=center>T1:R1:C2<td align=center>T1:R1:C3
</table>
<td>T2:R1:C2
<table border=1 width=180>
<tr>
<td align=center>T3:R1:C1<td
align=center>T3:R1:C2
<tr>
<td align=center>T3:R2:C1<td
align=center>T3:R2:C2
</table>
```

```
<tr>
<td colspan=2>T2:R2:C1 (Note that this cell is using the
Colspan attribute to extend across the table)
<table border=1 width=490>
<tr align=center>
<td align=center>T4:R1:C1<td
align=center>T4:R1:C2<td align=center>T4:R1:C3
</table>
</table>
<P>
Now we'll add a second level of nesting to make things
even more complex...
<P>
<table border=1 width=500>
<tr><td>T5:R1:C1
<table border=1 width=480>
<tr><td>T2:R1:C1
<table border=1 width=280>
<tr>
<td align=center>T1:R1:C1<td
align=center>T1:R1:C2<td align=center>T1:R1:C3
</table>
<td>T2:R1:C2
<table border=1 width=180>
<tr>
<td align=center>T3:R1:C1<td
```


CanDo

part 8

*It may be the last in the series, but **John Kennedy** has a lot to get through in this last CanDo tutorial. Take your seats, please.*

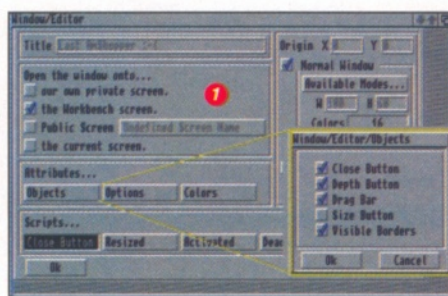
I've two goals for this final instalment of the CanDo tutorial. First of all, I'd like to demonstrate how CanDo can integrate with the rest of the Amiga system. This will let you use CanDo with your existing software, and also expand on their features. Secondly, I want to prove that CanDo is a worthwhile programming environment in its own right: in fact, a unique system which can not only perform the usual programming language string, file and number processing things, but also make it easy to control graphics and sound. So, enough chat and let's get down to it.



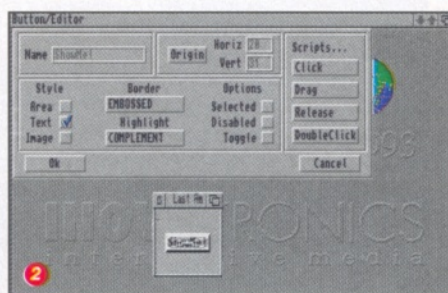
ARexx

The key to letting CanDo control your existing applications is, of course, ARexx. No other computing platform allows this degree of integration and CanDo is ideally placed to make the most of it. CanDo can both react to and issue ARexx commands. In this example, I'm going to assume you have the excellent Directory Opus file management system running in the background. If you don't, well shame on you: you should.

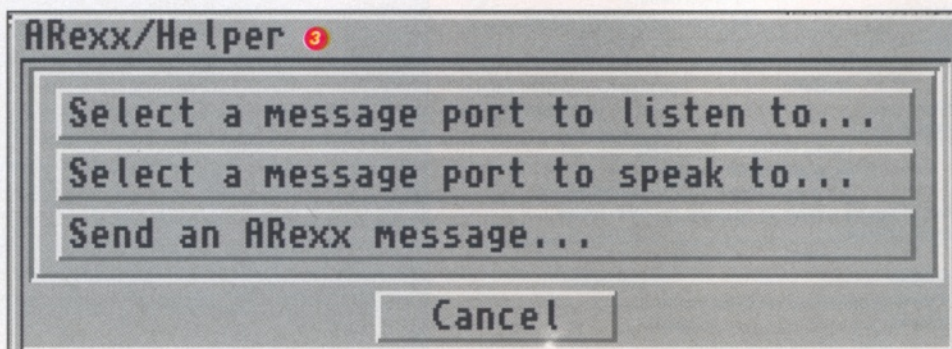
1 Let's create a small window which will sit on the Workbench display. Starting from a clean deck, use the Window/Editor display to define a small window.



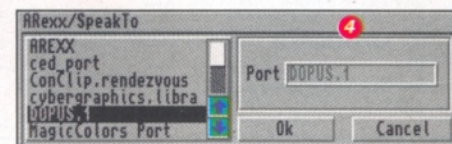
2 Now create a simple text button. This is the button which will execute an ARexx script. When you have created it, go to the Click script.



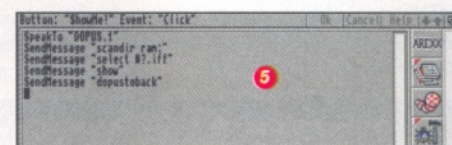
3 Here we enter the magic ARexx code. Of course, CanDo will help as much as it can. Click on the ARexx button at the top of the list of icons on the right of the screen, and you'll see this requester. From here you can do three things: set the ARexx name of port you want to listen to, set the name you want to talk to, and enter an ARexx command to send.



4 Choose the second option (Select a message port to speak to...) and you'll see a new requester. CanDo has kindly created a list of all programs running with ARexx ports. If Directory Opus' port isn't there (DOPUS.1) then make sure the program is actually loaded and running.



5 CanDo will insert some scripting commands into the script. Now we can add some of our own commands. You can either type them in or use the ARexx menu option "Send an ARexx message". How do we know which commands to enter? The DOpus manual has a long list of commands included at the back. Similarly other ARexx compatible programs will list their ARexx commands.



All there is to it. When you browse the deck, the new window will appear on the Workbench. Click on the single button, and the ARexx script will be executed. The script causes DOpus to list the contents of the RAM: drive, select any files ending in .IFF and then display them. Finally the screen is pushed to the background again.

Lottery

Perhaps if you win the lottery you could buy the Amiga and re-launch it. Well, you can't say that I didn't help you if you use this program to help pick the winning numbers. It's a perfect example of using standard programming techniques and Amiga graphics together. No other programming system makes this as simple.

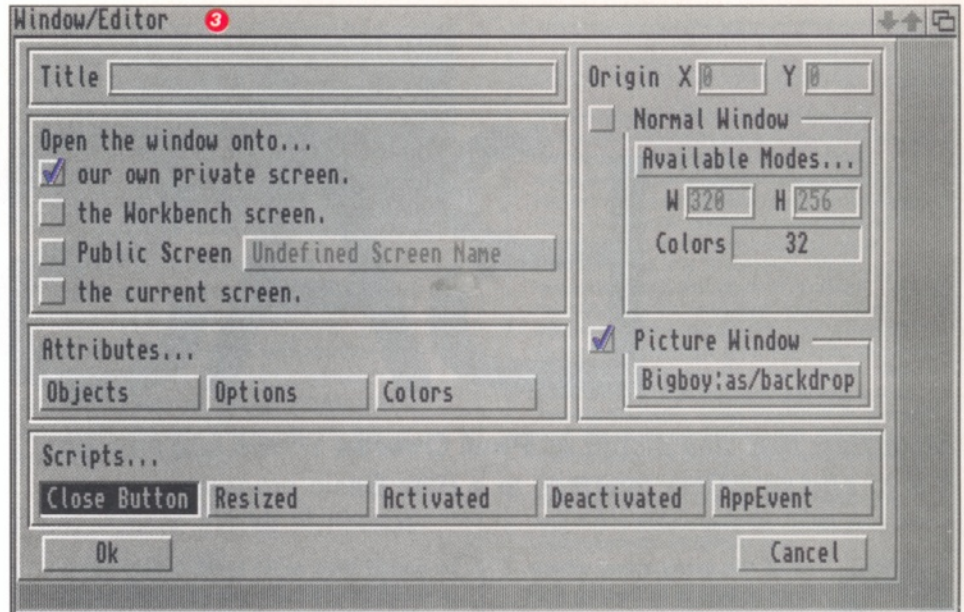


1 First of all, load up your favourite paint program and draw some balls. I mean it: load up Deluxe Paint, set the number of colours to 32, create a range from black to white and use the shaded fill to create a sphere. Make it about 32 pixels square, cut it out as a brush and save it.

2 Now using the same screen mode and palette, create a nice display for your lottery number program – like the one below. This ensures the brush and the screen mode are set up to use the same colours. Save it as a plain IFF screen.

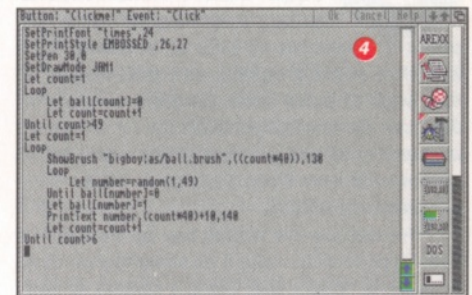


3 Now load CanDo. Use the Window/Editor to create a default screen which uses the image you designed as a backdrop. I also switched off the screen borders and title to improve the appearance of the display.



4 Create a button as before, and attach this script to the Click action. This is the heart of the program. First it defines a font to use. Then it starts a loop from 1 to 49, and using an array called Ball[] sets all the elements to zero. Then it starts another loop from 1 to 6, as there are six balls to be picked. The value of each ball is picked at random, and a check is performed to make sure that this ball hasn't already been picked. Finally the ball brush is loaded and displayed, as is the random number. We use the count variable to position the balls and numbers across the screen.

The finished program is shown below. Remember, we agreed to go half and half if your numbers came up! There is plenty of scope for you to add to the program. For example, using



Deluxe Paint's ability to mess around with brushes to make the ball brush spin and vanish into the screen. Capture this as an AnimBrush and save it. CanDo can then replay the animation to make the balls spin onto the screen.

That's all we have time for this month, and sadly, that's it as far as the tutorial goes. I'll try and put some CanDo information up on a Web site, so if you are interested, please send me an email to: johnk@infosys2.thegap.com putting "CanDo" in the subject listing. ■



Blitz BASIC

Part 3

More Blitz help this month as **Paul Overaa** shows just how easy it is to add an ARexx interface to a Blitz Basic program...

One of the many areas where Blitz excels is in having a set of specialised functions that allow ARexx communications to be performed. In many cases it's possible to take an existing Intuition event program, and with only a few lines of extra code, create a version that can be controlled both by conventional gadget/menu use – and by commands sent from a script or other program via ARexx.

The example I've written has (as always) been kept small to make it as straightforward as possible to understand: Using a custom screen a window is opened containing four gadtool button gadgets labelled Black, Green, Blue and White. As you select these gadgets – boxes of the appropriate colour get drawn! In this respect the program, event-wise, is easier than that offered last month but, in addition to these gadget controls, I've also added an ARexx port and a simple 'control only' ARexx interface that looks for the commands BLACK, GREEN, BLUE and WHITE. Needless to say it's these facilities, which allow ARexx scripts and so on to remotely change the box colour, that are the main area of interest this month.

As far as the communications side of things are concerned we need to start the discussions with Exec since ARexx essentially just makes use of the general messaging facilities that Exec provides. ARexx's real job, as far as its communications go then, is primarily to act as a sort of control centre. Programs or scripts send their messages to ARexx using Exec functions, and ARexx then sends them on to the required destination again using Exec functions. How does ARexx know where the messages should

be going? Well, as far as the scripts that you write are concerned – you tell it by having your script set the current host using the ADDRESS command. ARexx checks for, and all being well locates, these ports by looking at a 'public ports' list which Exec maintains. Because of this any port used for ARexx communications has to be made visible to the system by having its name added to this list.

Port Creation And Event Handling

With Blitz, public port creation and removal is achieved using the CreateMsgPort() and DeleteMsgPort() functions and, as with all allocation/deallocation operations it's best to check that the port actually gets created. The approach I've adopted therefore sandwiches a conventional event handling loop within an 'If/End If' framework that looks like this...

```
port.l=CreateMsgPort("blitzrexx")
if(port)
    ; event handling loop
    DeleteMsgPort()
End If
```

In general, to transmit a message a program will allocate a block of memory, fill it with data, and then send it to the port belonging to the destination program. These messages incidentally are always defined as extensions to the basic Exec message structure and any amount of additional data can be tagged onto them. In the case of Intuition events the extended unit used is called an IntuiMessage but ARexx, similarly, has its own special message format based on a RexxMsg structure.

The good news at this point, however, is that Blitz's high-level event handling can deal with both Intuition and ARexx messages without you, the coder, needing to know anything about the internal message arrangements. You do however need to be able to collect, and properly deal with, messages that turn up. Programs are always signalled by Exec whenever a message arrives at a port and so, providing the program is bothering to look for these signals, it's relatively easy for it to tell when a new message has arrived. When detecting conventional Intuition events Blitz programs can use the WaitEvent command but



Incoming ARexx events are mapped to the corresponding gadget identities and then passed to the ProcessEvent() routine just as though a gadget had been hit!

there is in fact a more general function available, called Wait, that allows ANY incoming message to be detected. In short – it's this latter function that needs to be used when ARexx messages are involved!

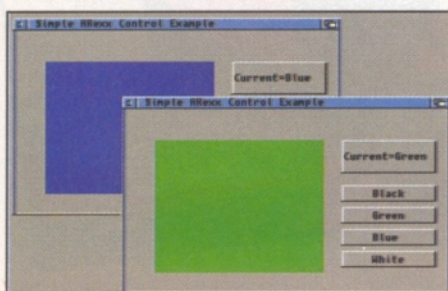
Once a message has been collected and used it needs to be 'replied' to. This is a job which involves the program which received the message linking that same message into the message port of the program that originally sent the message. The only difference on this return journey is that the message will be given a 'finished with' marker – this tells the sender that the message has been dealt with (and therefore that the block of memory being used for the message is free for re-use). With Intuition events Blitz handles everything transparently. With

Listing 1

```
#B1_ID=1
#B1_W=120
#B1_H=15
#B1_X=270
#B1_Y=70
B_TEXT$(1)=      "Black"

#B2_ID=2
#B2_W=120
#B2_H=15
#B2_X=270
#B2_Y=90
B_TEXT$(2)=      "Green"
```

● Listing 1: You'll find these and other button gadget characteristics and identities defined in the source code's initialisation block.



The example program in action!

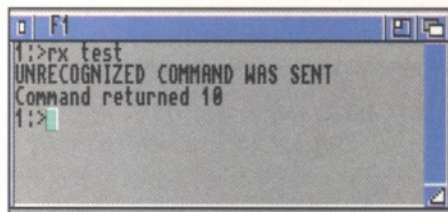
ARexx messages however the replying task is left up to you – so it's necessary to make a ReplyRexxMsg() call once all associated message processing is complete.

The Example Itself

To appreciate the overall structure of the example source it's best, initially, forget about the ARexx side of things altogether and concentrate solely on the Intuition-related aspects. Listing 1 shows part of the program's initialisation block that defines the positions, size and identities of the four gadget tool gadgets. The identities have been defined using constants in the form #BX_ID which represent the numerical values 1, 2, 3 and 4. This is convenient in two respects: Firstly, by defining the gadget text labels in an array called B_TEXT\$(n) I'm able to identify the text associated with a gadget n hit using B_TEXT\$(n). Secondly, since a three bitplane (8 colour) display is being used I've used RGB commands to set screen colours 4,5,6 and 7 as Black, Green, Blue and White respectively. This enables a DrawBox() routine to identify the right box colour to be used by adding 3 to the gadget identity that Blitz's GadgetHit function returns.

Because any single gadget identity enables both the required text and the box colour to be determined the event processing routine has very little to do. As you'll see from listing 2 it simply uses an event_id number (a #BX_ID gadget identity returned by GadgetHit) and calls a couple of routines, namely DisplayText() and DisplayBox(), to modify the display. You'll notice that this arrangement actually means that the case selection statements shown are not needed – I've left them in however to illustrate the general framework needed in those cases where additional processing is required.

The main event handling code is based on a While/Wend loop with events being collected until a #IDCMP_CLOSEWINDOW event arrives. During this time, checks are made on every message received to see whether it is an Intuition event (when the Event function returns a non-zero value) or an ARexx event (in which case RexxEvent() will be non-zero). In the case



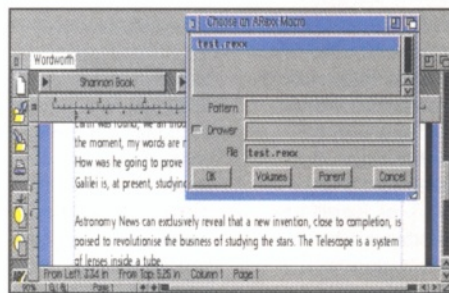
If you modify the script to include unrecognisable commands this is the sort of error message that will appear.

of Intuition events a case/select statement is then used to isolate #IDCMP_GADGETUP messages, extract the gadget identity (via GadgetHit), and pass this id value to the ProcessEvent() routine.

And Now That ARexx Connection...

Structure-wise, ARexx event handling follows much the same pathway with minor differences including the fact that Blitz's GetRexxCommand() function needs to be used to extract the command string contained in the message and that the ReplyRexxMsg routine needs to be used to tell ARexx that the message has been dealt with. The most important thing to remember about the ARexx event handling however is that the program containing the interface has absolutely no control over the type of commands that an external program can send.

In our case then we need to not only be able to detect what we deem are valid commands (BLACK, GREEN, BLUE and WHITE) but must safely ignore any other text strings that might be sent. The easiest way to do this is to set up a case/select statement that contains a default entry for any unrecognised command and what I've chosen to do is display a ????? message whilst re-drawing the box using its original display colour. Since the Blitz ReplyRexxMsg routine allows error codes to be sent back to the process that originated the



You might also like to try controlling the example program from other applications that have ARexx interfaces!

Listing 3

```
If error_flag=False
  ReplyRexxMsg
  arexx_event,#RC_OK,0,""
Else ReplyRexxMsgarexx_event,#RC_WARN,0,""
End If
```

● Listing 3: Blitz's ReplyRexxMsg statement allows error codes to be sent back to inform scripts that a command has not been understood.

Event messages

Something You Might Like To Know...

Everyone talks about Intuition and ARexx messages as being sent and received because that, in a logical sense, is what's happening. In actual fact however nothing really gets 'sent', copied, or moved at all – the data that forms the message stays exactly where it is in memory. What happens is that the block of memory representing the 'message' has various address fields present which get adjusted so that the message gets 'logically attached' to the message port it is destined for. The good thing about this arrangement is that there is therefore never any need to actually copy the message information. Programs that receive a message read the contents of the very same block of memory that the program sending the message allocated and this is what makes the Amiga message arrangements extremely fast!

external command I've also made use of this facility. You'll see from the code fragment in listing 3 that I've used an error_flag variable which becomes set when unrecognised ARexx commands pass through the ARexx event handler. The #RC_OK and #RC_WARN constants, incidentally, are two of several general codes that are defined in the Amiga system headers (and are made available to the Blitz code by including the Blitz amigalib.res module).

The Coverdisk Code...

Unfortunately the source code (blitzrexx.txt) and a runnable version (blitzrexx) was not available in time to go on the Coverdisk. Instead you can find it all on Amiga Format's CD. Run the program by double clicking the blitzrexx icon and choose various gadgets to see what the program does. Having done that (with the program still up and running) pull down the custom screen to expose the Workbench, open a Shell window, and adjust the window and screen positions so that you can see both the Shell and the example program. Then use rx to execute the test.rexx script. You'll see the box colour changing as the script issues the various colour commands!

The script incidentally includes an error trap that will catch the #RC_WARN indicators that get passed back when unrecognised commands are used. Once you have experimented, and appreciate what's going on, you might like to add some rogue commands to see what happens. Another easy modification would be to add a QUIT command by extending the ARexx event case/select structure and forcibly setting idcmp_event to #IDCMP_CLOSEWINDOW when such a message is received! ■

Listing 2

Statement ProcessEvent(event_id)

SHARED B_TEXT\$(0)

Select event_id

DisplayText(B_TEXT\$(event_id))

DrawBox(event_id)

; no gadget specific processing needed

; BUT you could add it here if it was...

Case #B1_ID ;Black

Case #B2_ID ;Green

Case #B3_ID ;Blue

Case #B4_ID ;White

End Select

● Listing 2: A careful choice of gadget identities has meant that very little work needs to be done during event processing.

Talking shop

*With a lump in his throat,
David Taylor delves into the
AS postbag and dabs
away a tear as he
reads your farewells.*

The very last Talking Shop and as you'd expect a few of you get the chance to say goodbye.

Despite all the negative letters we've had, we haven't had a single "Told you so" or "Glad to see you go" letters (yet) and you all seem genuinely sad that we are being pulled.

Thank you all for your support over the years and thanks for your letters of gratitude which have made it all worthwhile.

Fond Farewells

I have just received the latest issue and it's with dismay I discover that the next issue is to be the last – that's got to be the worst Christmas present ever. To the Shopper teams of past and present thank you for the past five years. You will be missed. I wouldn't know my Amiga half as I do well without you. In the Captain's immortal words: "It Was Fun"

Well it's with a heavy heart that I say goodbye. If Viscorp do manage to bring the Amiga back again lets hope that there's a chance of resurrection for Amiga Shopper. As long as one Amiga owner remains, the fire still burns. Be seeing you

Dave
E-Mail

As a subscriber to AS from issue number one, I today (11.11.96) received issue 70 and there on page 50 was a large red logo with the words "Stop Press" last issue to be number 71. Is this really so? If it is the case, then AS71 will truly be a sad Christmas present. I do however understand that the market forces closure when revenue does not cover expenditure.

Please let me convey my thanks, to you, all the past and



present staff and contributors who have helped to make what I consider to have been the very best Amiga magazine to grace the shelves of newsagents. Our magazine will be sadly missed. I wish you all well for the future. Once an Amiga user always an Amiga user.

Paul Law
E-Mail

Broken Hearted

Just got the latest issue of AS today, and it was with a broken heart I read about the last issue. Never mind all the issues I've paid for (I have more than half a year's subscription left!), but AS is really the only serious option for Amiga owners. It seems like one of the main reasons AS has stopped is that no-one believes in the future of the Amiga. Sad – especially as this clearly shows that you haven't been watching the Amiga market recently.

Try to look up phase 5's homepage (<http://www.phase5.de>) and take a look at the pages concerning the PowerUp project and the A\Box. Then tell your readers once more that it is doubtful that the Amiga will ever re-emerge from the dead!

Of course, the A\Box is not called Amiga, and there are reasons why. Therefore, you may say that the A\Box cannot be regarded as the new Amiga, but with all the major Amiga

Phase 5 and their A\Box could well hold the future for the Amiga.



DIGITAL PRODUCTS

developers showing support for the A\Box, I regard the A\Box as the new Amiga. Wordworth, Final Writer, Personal Paint, StormC, the list goes on (have a look at the list yourself at phase 5's PowerUp page) plus probably most of the current PD and shareware on the Amiga will all get converted to the new p-OS with Amiga look'n'feel. Add to this the extensive use of

custom chips – that are NOT underpowered by today's standard – and you probably cannot even dream of more.

If magazines like AS stop the nonsense about replacing the trusty Amigas with crappy PC's and instead sound a bit optimistic about things like the A\Box project, I for one would enjoy reading AS much more.

How to contact us



£25 Winner

letter published every month receives £25.

So, put pen to paper and send your letters in to:

**Talking Shop,
Amiga Shopper,**

Write in to Talking Shop, Amiga Shopper's letters pages, and you could win yourself some cash. The Star

**Future Publishing,
30 Monmouth St,
Bath, Avon BA1 2BW.**

Alternatively, you can E-mail your letters to:

**amshopper@cix.compulink.co.uk
davetaylor@futurenet.co.uk**

All the letters received at these addresses will be considered for publication, unless you specifically advise us otherwise.

The feature on UAE in AS70 is interesting, but as you know just as well as the rest of the Amiga community, the emulator way is not the way to go. Buying a Pentium just to go back to the old A500 days is not an option. Period.

Therefore, I do hope that AS will one day come again with a new name: "A/Box Shopper"!! P.S.: Interesting reader's mail you have on page 49, "Sayonara". Glad to hear that people are interested in making the future Amiga multi-lingual. Though, it still puzzles me that AS hasn't mentioned Amiga Translators' Organisation with a single word... Kind regards,

Ole Friis

Main Administrator & Danish Language Administrator of Amiga Translators' Organisation:
http://www2.dk-online.dk/users/Ole_Friis/Trans/

Years to Come

I am sorry to see that issue 71 will be the last. I have enjoyed reading the magazine for just over four years. In fact since I changed from the Sinclair QL (which I had been using since 1986) to an A600. I would say to your readers that they should not be despondent about the Amiga. The fact that it is no longer in production will not make the slightest bit of difference to their enjoyment of a magnificent machine.

It will go on for years yet with small firms making accelerators and RAM cards; replacement parts should not be a problem for many years. I would suggest that they get together to form an international user group as did the users of the Sinclair QL. I still run a local branch of the QL user group "Quanta" (QL Users and Tinkerers Association). Spares are still available for the QL even 12 years after it ceased production. I see no reason why the Amiga should not continue along the same lines. As we now have an emulator to kick some sense into the PC, we are in a similar position to the QL which has emulators on the Amiga, Atari and PC.

I suggest that users of the Amiga now buy as much software as they can afford; things like the better quality software (Wordworth and similar for DTP, image processors, file handlers, word processors, spreadsheets, account packages, etc). Get yourself set up for some years. The Amiga is still a good machine, so

stick with it.

Peter Rowell
Cambridge

Well, thanks for your kind words. It is indeed sad to say goodbye, but the decision to close Amiga Shopper was, in a way, not made by ourselves (or even the faceless Future Publishing). There is a democracy of sorts within publishing. Magazines that sell well thrive and those that are left on the shelves don't. As the Amiga's fortunes have hit the rocks, the readers of Amiga mags have dwindled and AS has passed from the former category to the latter.

It's not anyone's fault. Not ours, not Future's (in fact they have kept publishing it for far longer than competitors would have believed) and not the readers. If anyone is to blame, it is the people who mismanaged the Amiga and hopefully Viscorp can change that, but they'll have one hell of a job.

As Mr Rowell says, none of that should deter users. If the machine does what you need it to, then don't throw money away on a new one. The Amiga will be supported by small businesses for years and there is still faithful old Amiga Format to supply you with the very best Amiga coverage. You'll certainly see me popping up there for as long as they'll have me, so I expect I'll see you there too.

As to the negative attitude of the magazine. I don't believe it has been. We have been straight all the way. When times were good, we said so and when they weren't we said so too. The piece on the Amiga emulator wasn't meant to say pack your bags to PC land. It was there to show what has happened (it is an incredible achievement) and to say to those of you with both systems (of which there are quite a few) or even those who have sold their Amiga that you don't have to leave the machine behind.

As I've said all over, the problem isn't finding things to write about in AS. We could continue to fill as many pages as Amiga Format, but without the readership we couldn't afford the space. Yes, there are still many exciting projects and packages coming out for Amiga owners and Future have not stopped AS because they don't believe there is a future for the Amiga. They would have kept printing it for as long as people bought it - they

are a business after all. But our numbers have dwindled - quite probably because of the enormous success of the Amiga Format Cover CD which makes the magazine so attractive that few can resist. How could we with a single floppy and less pages compete with our own sister mag? (And no there wasn't a chance of producing an AS CD version because there wouldn't be the software for it.) It therefore added to our troubles until we had no future (excuse the pun). Still, it has been fun and I think we've all enjoyed it. All that remains is to thank yourselves for your loyalty and to quickly mention a few names. Sue Grant deserves a pat on the back for managing to successfully relaunch AS when it was threatened with closure 18 months ago. Without her, I wouldn't be here and neither would the mag. She did a wonderful job in pulling a magazine together and making it much more attractive to readers. Thanks must also go to Nick Aspell for doing an incredible job in putting together pages quickly whenever we asked him, even when he was heading out to the pub. Without his help your disks would never have had any labels and AS would be missing even more pages. Steve Dent has been working hard to get the majority of the last few issues of AS put together so hats off to him. Nick Veitch has always been a great help for advice and insight, knowing what exactly we would be able to cover from issue to issue and resolving any technical queries we ever had. Lastly a big thanks to Andrea Ball who has sacrificed a social life to spend her spare time getting all the parts of AS together and subbed. She might have grumbled about our late copy, but she always managed to turn around pages in record time.

We also have to thank our dedicated team of freelancers who have continued to make sure you have always had expert advice and reviews: John Kennedy, Paul Overaa, Steve Liddle, Ben Vost, Graeme Sandiford and Larry Hickmott. There have been others of course over the years and our thanks to them too, but these have been our recent backbone.

To those of you who have written in, but for whom we didn't have space: thank you for your time and effort - we enjoyed each and every one of your letters. Any final words? We did it our way. ■



The **non-existent** magazine for Amiga enthusiasts

AMIGA SHOPPER

Goodbye from the entire AS team!

Stop Press

AF93 will be a double
CD-ROM issue!
Unbelievable!

This is where we'd normally tell you about how packed the next issue of AS would be. As there isn't one though, we can't. So instead, we'd like to thank you all for your years of loyalty. We've enjoyed writing the magazine as much as you've enjoyed reading it. From all the staff, past and present, we wish you well and hope to hear from you in future issues of our sister magazine, Amiga Format – the world's biggest selling Amiga magazine. Don't forget it's now available in both floppy disk and CD-ROM editions. To make sure you get your copy, fill out the form and specify the version you would like to buy. Be seeing you...

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